
**Environmental Assessment for
Taxiway Whiskey Supplemental Projects
at Joint Base Andrews-Naval Air Facility Washington
Prince George's County, Maryland**

Final

September 2015



Prepared for:

**DEPARTMENT OF THE AIR FORCE
Joint Base Andrews-Naval Air Facility Washington
Prince George's County, Maryland**

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**FINDING OF NO SIGNIFICANT IMPACT AND
FINDING OF NO PRACTICABLE ALTERNATIVE FOR
TAXIWAY WHISKEY SUPPLEMENTAL PROJECTS
JOINT BASE ANDREWS-NAVAL AIR FACILITY WASHINGTON, MARYLAND**

This Finding of No Significant Impact (FONSI) and Finding of No Practicable Alternative (FONPA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; President's Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, 40 *Code of Federal Regulations* (CFR) 1500-1508; and Environmental Impact Analysis Process, 32 CFR 989. The decision in this FONSI and FONPA is based on information contained in the *Environmental Assessment for Taxiway Whiskey Supplemental Projects*, Joint Base Andrews-Naval Air Facility Washington (JBA), Maryland. The environmental assessment (EA) is attached to this FONSI/FONPA and incorporated by reference.

Decision

Based on the review of the EA, the Air Force has decided to proceed with rebuilding and realigning taxiways and performing ancillary tasks as described in the EA. The potential impacts to the human and natural environment were evaluated relative to the existing environment. Anticipated direct and indirect effects were assessed for each environmental resource or issue, and both short-term and long-term project effects were considered as well.

The proposed action is expected to result in less than significant or no effects on all resource areas considered (noise, air quality, safety and occupational health, earth resources, water resources, infrastructure and utilities, transportation, hazardous materials and waste, biological resources, cultural resources, socioeconomics [including environmental justice and protection of children], land use, and sustainability and greening). During construction, the proposed action will have temporary and minor impacts on the noise environment, air quality, soils, and the local transportation system on the base, and on the regional economy. Short-term minor impacts on soils will result from ground disturbance. The project is expected to result in a net decrease in impervious cover on the airfield. Although some taxiways will be widened from 75 feet to 82 feet, other impervious areas will be removed from the airfield, resulting in a minor net decrease in storm water runoff on the airfield. The action will permanently impact approximately 0.7 acre of wetlands and 1.8 acres of wetland buffer. JBA will obtain a Nontidal Wetland Permit from the Maryland Department of the Environment and a section 404 Wetland Permit from the U.S. Army Corps of Engineers for any loss of wetlands and will mitigate the loss in accordance with the permits. A FONPA is required for the proposed action because relocating the taxiways is not a feasible alternative. Before the start of construction, appropriate permits and approvals will be obtained. Any required mitigation will be conducted.

The projects will provide for larger aircraft utilization and will meet Air Force Standards for safe airfield operations. During construction, the proposed action will provide temporary socioeconomic benefits through the generation of construction jobs.

Overall, the analysis for this EA indicates that the proposed actions will not result in or contribute to significant adverse direct, indirect, or cumulative impacts on the resources in the region.

Conclusion

Finding of No Practicable Alternative

Considering the information contained herein (including the attached EA), and pursuant to the authority delegated by the Headquarters Air Force Order Mission Directive 1-18, paragraph 6, the Air Force finds there is no practicable alternative to completing the Proposed Action within wetlands. The Proposed

Action, as designed, includes all practicable measures to minimize impacts to wetlands. This FONPA is required pursuant to Executive Order 11990.

Finding of No Significant Impact

In accordance with the CEQ regulations implementing NEPA and the Air Force Environmental Impact Analysis Process, the Air Force concludes that the Proposed Action will have no significant impact on the quality of the human environment and that the preparation of an environmental impact statement is not warranted.



DARRYL W. BURKE
Major General, USAF
Commander, Air Force District of Washington



Date

Attachment: Environmental Assessment for Taxiway Whiskey Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, Prince George's County, Maryland

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Cover Sheet

Environmental Assessment for Taxiway Whiskey Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, Maryland

Responsible Agencies: U.S. Air Force (USAF), Air Force District Washington, Headquarters Air Mobility Command, and the 11th Wing, Joint Base Andrews-Naval Air Facility Washington, Maryland (JBA)

Affected Location: JBA, Prince George's County, Maryland

Proposed Action: Taxiway Whiskey Supplemental Projects on JBA Airfield.

Report Designation: Final Environmental Assessment (EA)

Written comments and inquiries regarding this document should be directed to Ms. Anne Hodges, 11 CES/CEIE/Asset Optimization, at (301) 981-1426, or e-mail to anne.hodges@afncr.af.mil

Abstract: JBA proposes to rebuild Taxiways Whiskey 1 (W-1), Charlie West, and Whiskey 4 (W-4); realign Taxiway W-1; and reconstruct the intersections of Taxiway Whiskey with Taxiway Whiskey 3 (W-3) and Taxiway Whiskey 5 (W-5). The project would bring Taxiway Whiskey and connecting taxiways (W-1, Charlie West, and W-4) into compliance with current Air Force and Federal Aviation Administration (FAA) criteria for modified heavy load aircraft designed for Type A traffic.

Taxiways W-1, Charlie West, and W-4 would be widened from 75 feet to 82 feet and would have 50-foot-wide shoulders or appropriate fillets. Taxiway W-1 would be realigned to meet current UFC geometry criteria and to better align it with adjacent taxiways. The intersection of Taxiway W-3 and Taxiway Whiskey would be realigned and a temporary taxiway would be constructed to connect Taxiway W-3 to Taxiway Whiskey 2 (W-2) during the reconstruction to maintain missions for Hangar 19. The intersection of Taxiway W-5 and Taxiway Whiskey would be reconstructed and a temporary taxiway to connect the Hangar 20 ramp to Taxiway Whiskey would be constructed. Both temporary taxiways would be 75 feet wide with 25-foot-wide shoulders. The temporary taxiway to Hangar 20 could be retained as a permanent taxiway, and the EA evaluates the potential effects of the possibility.

This EA has been prepared to address the potential impacts of undertaking the abovementioned project.

This EA has been prepared to report an evaluation of the proposed action and alternatives, including the No Action Alternative. Resource areas addressed in the EA are noise, air quality, safety and occupational health, earth resources, water resources (including wetlands), infrastructure/utilities, transportation, hazardous materials and wastes, biological resources, cultural resources, historic and archaeological resources, socioeconomics (including environmental justice and protection of children), land use and visual resources, and sustainability and greening.

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Abbreviations and Acronyms

µg/m ³	micrograms per cubic meter	ERP	Environmental Restoration Program
°F	degrees Fahrenheit		
AADT	average annual daily traffic	FAA	Federal Aviation Administration
AFDW	Air Force District of Washington	FOD	foreign object debris
AFI	Air Force Instruction	FONPA	Finding of No Practicable Alternative
AFPD	Air Force Policy Directive		
AQCR	Air-Quality Control Region	FONSI	Finding of No Significant Impact
AT/FP	Anti-Terrorism/Force Protection		
BMP	best management practice	GDP	gross domestic product
CARB	California Air Resources Board	GHG	greenhouse gas
		HAZMAT	hazardous materials
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	I	Interstate
		IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
CEQ	Council on Environmental Quality	JBA	Joint Base Andrews-Naval Air Facility Washington
CFR	Code of Federal Regulations	L _{eq}	equivalent sound level
CO	carbon monoxide	LUC	land use control
CO ₂	carbon dioxide	MD	Maryland
COC	chemical of concern	MDE	Maryland Department of the Environment
COMAR	Code of Maryland Regulations	MDOT	Maryland Department of Transportation
dB	decibel	msl	mean sea level
dBA	A-weighted decibel	NAAQS	National Ambient Air Quality Standards
DNL	day-night sound level		
DoD	Department of Defense	NEPA	National Environmental Policy Act
EA	environmental assessment		
EIAP	Environmental Impact Analysis Process	NO ₂	nitrogen dioxide
		NO _x	oxides of nitrogen
EIFS	Economic Impact Forecast System	NPDES	National Pollutant Discharge Elimination System
EIS	environmental impact statement		
EO	executive order	O ₃	ozone
EPA	U.S. Environmental Protection Agency	OSHA	Occupational Safety and Health Administration
		PCE	tetrachloroethene

PM _{2.5}	small particulate matter
PM ₁₀	particulate matter
ppm	part per million
RCRA	Resource Conservation and Recovery Act
RTV	rational threshold value
SO ₂	sulfur dioxide
SO _x	oxides of sulfur
TCE	trichloroethylene
TMDL	total maximum daily load
tpy	tons per year
U.S.C.	United States Code
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
VOC	volatile organic compound
vpd	vehicles per day

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SECTION 1.0

PURPOSE, NEED, AND SCOPE

1.1 BACKGROUND

Joint Base Andrews-Naval Air Facility Washington (JBA) is 5 miles southeast of Washington, DC, in southern Prince George's County, Maryland (Figure 1-1). The Base occupies 4,346 acres abutting Interstate 495, between Maryland Route 4 (Pennsylvania Avenue) and Maryland Route 5 (Branch Avenue). The Patuxent River is approximately 7 miles east of the Base. The communities of Camp Springs and Morningside are adjacent to the Base. The surrounding areas consist of residential, industrial, commercial, and institutional areas and woodlands.

JBA proposes to improve its operational efficiency and comply with current airfield standards by widening existing taxiways and upgrading select airfield utility services. The taxiway improvements would include excavation, site preparation, striping, restoration of disturbed areas, and all necessary and essential utilities work to satisfy JBA operational requirements. This environmental assessment (EA) has been prepared to address the potential impacts of undertaking the abovementioned projects.

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the project is to rebuild Taxiways Whiskey 1 (W-1), Charlie West, and Whiskey 4 (W-4); realign Taxiway W-1; and reconstruct the intersections of Taxiway Whiskey with Taxiway Whiskey 3 (W-3) and Taxiway Whiskey 5 (W-5). The project would bring Taxiway Whiskey and connecting taxiways (W-1, Charlie West, and W-4) into compliance with current Air Force and Federal Aviation Administration (FAA) criteria for modified heavy load aircraft designed for Type A traffic.

The project is needed to bring Taxiway Whiskey and interconnecting taxiways into conformance with FAA and Air Force regulatory requirements, to reduce the likelihood that Foreign Object Debris (FOD) (such as loose pieces of cement), which can cause injury to personnel and damage to aircraft, will be encountered on the airfield, and to meet current and future JBA mission aircraft needs. Mission aircraft include the VC-25 (B747-200), C-40, C-32, C-20, with potential to accommodate an A-380 to support Foreign Heads of State mission requirements and comply with FAA Taxiway Design Group 7. The concrete on the taxiways is badly deteriorated and more than 50 years old. It is causing a high FOD potential and potential damage to aircraft. Because of the continuing deterioration of the pavements, the taxiways are continually undergoing emergency repairs, causing mission delays. The taxiway must be upgraded to support Foreign Heads of State mission requirements identified at JBA, which necessitates that the taxiway be 82 feet wide and connecting taxiways have a radius of taxiway turn of 150 feet. Adjoining Taxiways W-1, W-4, and Charlie West require fillet revisions to a turn radius of 150 feet to the West Runway. To accommodate the low visibility CAT III airfield operations at JBA, new taxiway centerline lights, associated duct banks and electrical components, and an airfield lighting vault are required.

1.3 SCOPE OF THE EA

This EA evaluates the potential impacts on the human and natural environments of rebuilding Taxiways W-1, W-4, Charlie West, and reconstructing intersections on Taxiway Whiskey. Temporary taxiways constructed to maintain the JBA mission, associated utility work, and demolition of some airfield elements are also evaluated. The EA evaluates the disposal of all material removed during the project. The proposed action is evaluated to determine the potential

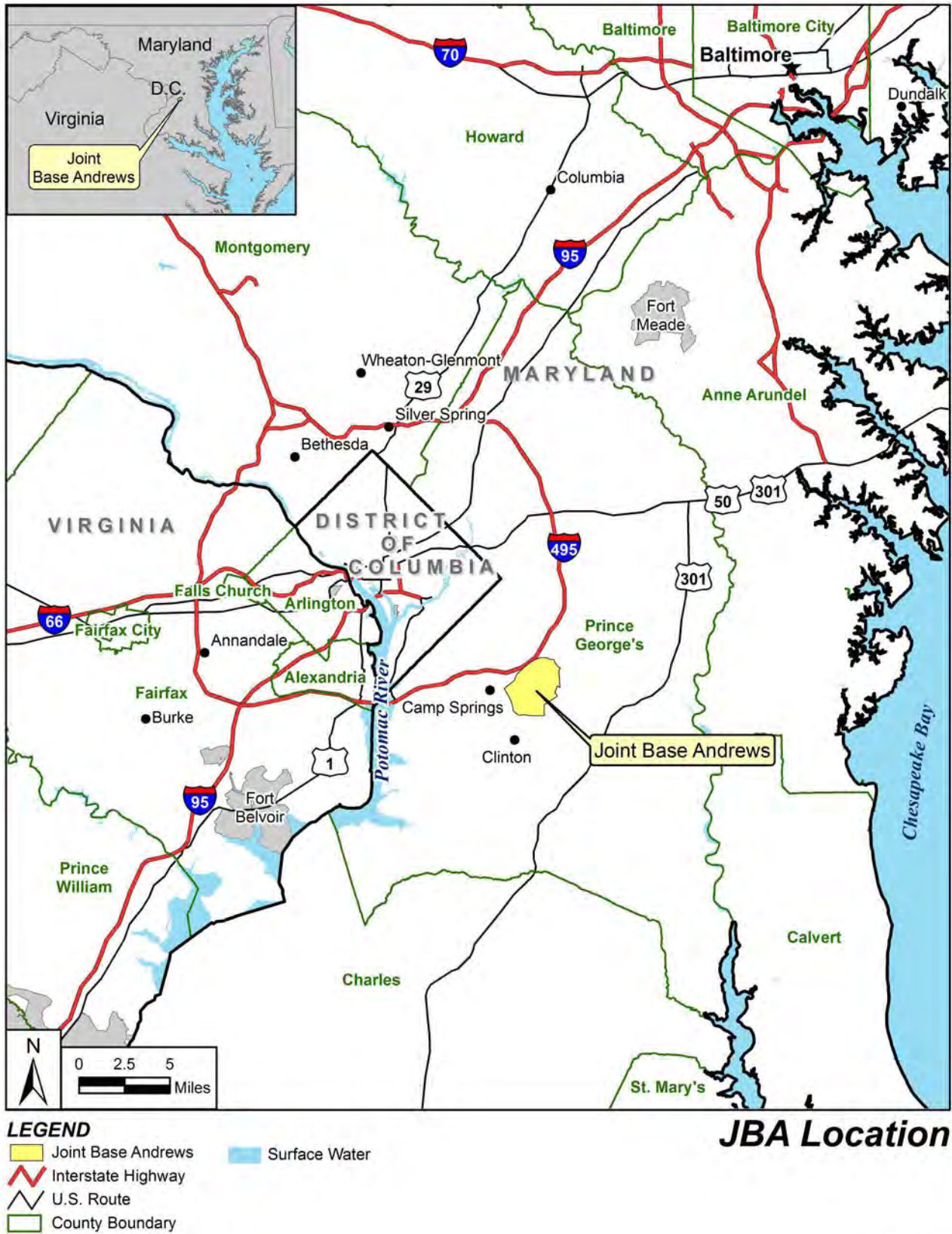


Figure 1-1

for significant adverse effects on the human and natural environments, including short- and long-term, direct and indirect, and cumulative adverse effects.

The resources evaluated in this EA are noise; air quality; safety and occupational health; earth resources; water resources; infrastructure and utilities; transportation; hazardous materials and waste; biological resources; cultural resources; socioeconomic (including environmental justice and protection of children); land use; and sustainability and greening.

1.4 PUBLIC REVIEW AND INTERAGENCY COORDINATION

The Intergovernmental Coordination Act and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, require intergovernmental notifications before making any detailed statement of environmental impacts. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate potential environmental impacts of a proposed action. Comments from these agencies are subsequently incorporated into the Environmental Impact Analysis Process (EIAP). Agencies and departments of the state of Maryland responded that the proposed project is consistent with their plans, programs, and objectives. Copies of the letters are provided in Appendix A.

A notice of availability of the Draft EA and Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA) was published in the Prince George's County *Enquirer Gazette* and the *Andrews Gazette* newspapers, and copies of the Draft EA and FONSI/FONPA were available for review at the Upper Marlboro Branch of the Prince George's County Memorial Library System at 14730 Main Street, Upper Marlboro, Maryland, and the JBA Library at 1642 Brookley Avenue, JBA. Additionally, the Draft EA and Draft FONSI/FONPA were available on the Andrews AFB website, www.andrews.af.mil. No comments from members of the public were received, and agencies and departments of the state of Maryland responded that the proposed project is consistent with their plans, programs, and objectives. The National Capital Planning Commission responded that the project will comply with state and federal stormwater requirements, and suggested that JBA consider analyzing the project impacts on floodplains in accordance with EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*. Copies of the letters are provided in Appendix A.

1.5 SUMMARY OF KEY ENVIRONMENTAL COMPLIANCE REQUIREMENTS

1.5.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 *United States Code* [U.S.C.] sections 4321–4347) is a federal statute requiring the identification and analysis of potential environmental impacts of proposed federal actions before those actions are taken. NEPA mandates a structured approach to environmental impact analysis that requires federal agencies to use an interdisciplinary and systematic approach in their decision-making process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions.

This EA analyzes the proposed action and the No Action Alternative. If the analyses presented in the EA indicate that implementation of the proposed action would not result in significant environmental impacts, a FONSI will be prepared. A FONSI briefly presents reasons why a proposed action would not have a significant effect on the human and natural environment. If significant environmental issues that cannot be mitigated to insignificance are identified, an

environmental impact statement would be prepared or the proposed action would be abandoned and no action would be taken.

1.5.2 Integration of Other Environmental Statutes and Regulations

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the U.S. Air Force (USAF) will comply with applicable federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is the EIAP at Title 32 of the *Code of Federal Regulations* (CFR) Part 989, as amended. All contractors and their subcontractors are required to comply with the JBA *Environmental Protection Standards for Contracts*, which addresses general environmental protection requirements for all construction, renovation, repair, and service contracts at JBA. The standards address the use, storage, and disposal of hazardous materials and wastes; the protection of air quality, water resources (including stormwater control and erosion and sediment control), natural resources, and historic resources; and the disposal of contaminated soils, among other things.

1.6 ORGANIZATION OF THE DOCUMENT

This EA is organized into six sections and appendices.

- Section 1 contains the purpose of and need for the proposed action, the location of the proposed action, background information on JBA, a description of interagency coordination and community involvement, and an introduction to the organization of the EA.
- Section 2 provides a detailed description of the proposed action, a description of the No Action Alternative, a description of the decision to be made, and identification of the preferred alternative.
- Section 3 contains a general description of the biophysical resources and baseline conditions that could be affected by the proposed action, and it presents an analysis of the potential environmental consequences of implementing the Proposed Action and No Action Alternative.
- Section 4 provides a detailed discussion of potential cumulative effects.
- Section 5 lists the reviewers and preparers of the EA.
- Section 6 lists the sources of information used in preparing the EA.
- Appendices to the EA include the IICEP correspondence, supplementary information supporting the analyses in the EA, and a Coastal Zone Consistency Determination.

SECTION 2.0

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 SELECTION CRITERIA FOR ALTERNATIVES

To be considered a viable alternative, the proposed projects need to be in compliance with Air Force planning and design manuals, flight safety instructions, design standards, and engineering technical letters for airfield operations. These documents provide specifications and standards for airfield pavement design, visual air navigation, and installation of aircraft arresting gear. They include:

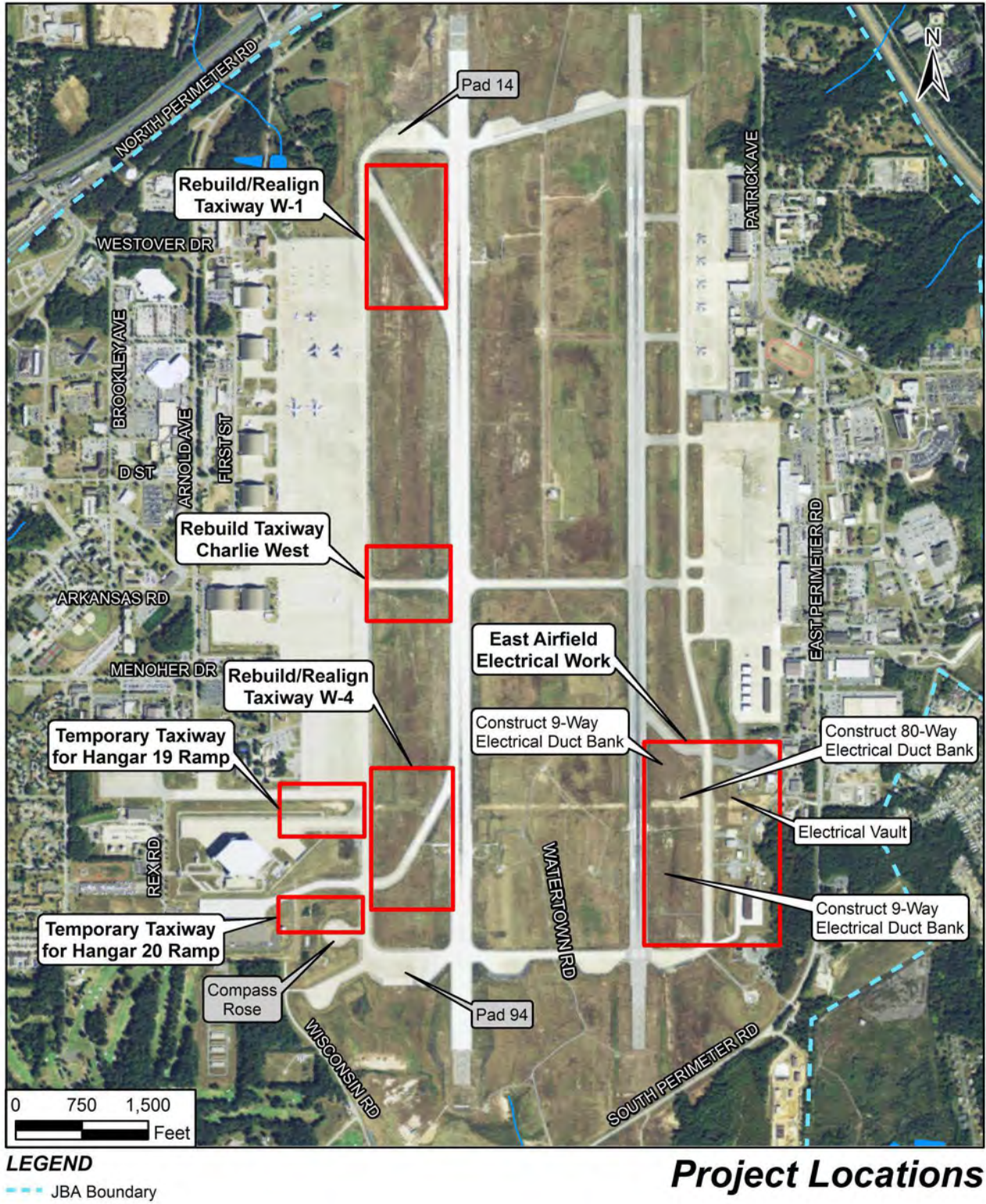
- Unified Facilities Criteria (UFC) 3-260-01, Airport and Heliport Planning and Design, 17 November 2008
- UFC 3-260-02, Pavement Design for Airfields, 30 June 2001
- UFC 1-300-02, Unified Facilities Guide Specifications Format Standard, September 2004, changed 4 December 2006
- UFC 3-535-01, Visual Air Navigation Facilities, 17 November 2005
- Engineering Technical Letter 04-2 (Change 1): Standard Airfield Pavement Marking Schedule, 19 July 2004
- Air Force Instruction (AFI) 32-1042, Standards for Marking Airfields, 27 Oct 2005

2.2 DETAILED DESCRIPTION OF THE PROPOSED ACTION

JBA proposes to undertake a number of supplementary actions to complete the reconstruction of Taxiway Whiskey. The reconstruction of Taxiway Whiskey proper was analyzed in a separate EA, *Final Environmental assessment for Replacement of Taxiway Sierra, Taxiway Whiskey, Pad 12 and Pad 13 at Joint Base Andrews* (April 2013). This EA analyzes the following actions that would be taken in association with the reconstruction of Taxiway Whiskey (Figure 2-1): reconstruct Taxiways W-1, W-4, and Charlie West to widen them from 75 feet to 82 feet and to have 50-foot-wide shoulders or appropriate fillets; realign Taxiway W-1 to meet current UFC geometry criteria and to better align it with adjacent taxiways; reconstruct the intersection of Taxiway W-3 and Taxiway Whiskey, and construct a temporary taxiway to connect Taxiway W-3 to Taxiway Whiskey 2 (W-2) during the reconstruction to maintain missions for Hangar 19; reconstruct the intersection of Taxiway W-5 and Taxiway Whiskey, and construct a temporary taxiway to connect the Hangar 20 ramp to Taxiway Whiskey during the reconstruction. Both temporary taxiways would be 75 feet wide with 25-foot-wide shoulders. The temporary taxiway to Hangar 20 could be retained as a permanent taxiway, and the EA evaluates the potential effects of the possibility.

The work would be accomplished in phases to ensure continuation of and minimal disruption of the mission. It is anticipated that phasing would be divided to accomplish separately the work on the east electrical vault, Taxiway W-1, Charlie West, and W-4. It is anticipated that the work would be accomplished from 2015 through 2019.

Utility work would be completed in association with the taxiway reconstruction. A new East Electrical Vault would be constructed to power the circuits on the east side of the airfield. There are not enough spare regulators in the West Electrical Vault to provide power for the new circuits on Taxiway Whiskey. The east side work includes constructing an access road to serve the vault and installing a new 80-way duct bank connecting the east electrical vault to manholes between



Source: ESRI 2013; JBA GIS 2014.

JBA-NAF Washington, Maryland

Figure 2-1

September 2015

the East Runway and Taxiway Echo. On the west side of the airfield the duct bank servicing the airfield would be relocated to the north of Taxiway W-2. The aviation fuel line and maintenance pit adjacent to Taxiways Whiskey and Charlie would be relocated. The privatized water utility line that provides fire protection along Taxiway Whiskey would be relocated. Pad 14, Pad 94, the Hot Cargo Pad, and the Compass Rose would be removed. Replacement locations for these will be identified and assessed, but will be accomplished under separate construction projects. Only their demolition, therefore, is analyzed in this EA.

A previously constructed haul route that runs parallel to the north edge of the West Apron would be used for the Taxiway W-1 work. The same haul route used for the Taxiway W-1 work would be extended to reach Taxiway Charlie West. During the work on Taxiway W-4, a previously used haul route using South Perimeter Drive and Wisconsin Avenue would be used and extended to reach Taxiway W-4. A haul route for accomplishing the east electrical vault work would be constructed parallel to the access road to the vault.

2.3 ALTERNATIVES

The USAF analyzed reasonable options for accomplishing the project. These options primarily involved phasing options for accomplishing the work, locations for support facilities (batch plant, haul roads, staging areas), and timing. Two phasing options were possible for accomplishing the work—replace all necessary pavements and systems simultaneously or accomplish the work in phases. A phased approach was the only viable option because of the need to maintain access to the West Apron and Hangars 19 and 20. Attempting to accomplish all parts of the project simultaneously would also have necessitated additional support systems (batch plants and staging areas), which would have elevated costs and introduced additional disruptions to accomplishing the mission at JBA. The option, therefore, was eliminated from further consideration.

Numerous projects similar to the proposed action have been undertaken at JBA in recent years. The West Runway has been upgraded and lengthened. Taxiways Sierra and Whiskey are being replaced and widened. These projects and the Proposed Action of this EA serve the same purpose of upgrading the facilities at JBA to support changes in aircraft and the future mission of JBA. Andrews provides continuous worldwide transport capabilities to the leadership of the United States, emergency response airlift capabilities to the National Capital Region, several homeland defense missions, and serves as the primary port of entry for foreign leaders to the nation's capital. The distinct flying missions at JBA by their very nature require short response times and close proximity to the nation's capital that no other military airfield within the region can provide. For this reason, alternative locations for the multitude of flying missions were not evaluated in this EA.

In support of the abovementioned projects, batch plants have been installed for accomplishing these projects, haul roads have been constructed, and staging areas have been designated for use during project execution. Existing locations of these support facilities could be used, or they could be relocated closer to where the work proposed under this project would be accomplished. Using the existing facilities was the favored approach to avoid environmental impacts associated with constructing new facilities and because their current locations pose minimal disruption to operations at JBA.

2.4 NO ACTION ALTERNATIVE

Under the No Action Alternative, the taxiways and taxiway intersections would not be reconstructed or realigned, utilities would not be upgraded, the Compass Rose and Pads 14 and 94 would not be demolished, existing taxiways would remain substandard and the ability of the base to provide necessary and appropriate airfield service to the Department of Defense (DoD)

and federal aircraft that use JBA would be jeopardized. Sustained aircraft operations on the inadequate and deteriorated taxiways would result in high ongoing maintenance costs, increased frequency of repairs and FOD and associated aircraft and equipment damage potential, and of personnel injuries. Selecting the No Action Alternative would severely hinder JBA's ability to accomplish its current and future mission.

2.5 DECISION TO BE MADE

Based on the analysis in this EA, the USAF will make one of three decisions regarding the Proposed Action:

- Choose the alternative that best meets the purpose and need and sign a FONSI/FONPA, allowing implementation of the selected alternative;
- Initiate preparation of an environmental impact statement (EIS) if it is determined that significant impacts would occur with implementation of the Proposed Action; or
- Select the No Action alternative, whereby the Proposed Action would not be implemented.

SECTION 3.0

AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 NOISE

3.1.1 Affected Environment

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, the distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities essential to a community's quality of life, such as construction or vehicular traffic.

Sound varies in both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The decibel is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. The Hertz is used to quantify sound frequency. The human ear responds differently to different frequencies. "A-weighting," measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of sound by humans. Sounds encountered in daily life and their dBA levels are provided in Table 3-1.

Table 3-1. Common sounds and their levels

Outdoor	Sound level (dBA)	Indoor
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringling telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998.

The dBA noise metric describes steady noise levels. Because very few noises are, in fact, constant, the A-weighted day-night sound level has been developed. The day-night sound level (DNL) is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 p.m. to 7 a.m.). It is a useful descriptor for noise because (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. In addition, the equivalent sound level (L_{eq}) is often used to describe the overall noise environment; L_{eq} is the average sound level in decibels.

The Noise Control Act of 1972 (Public Law 92-574) directs Federal agencies to comply with applicable Federal, state, and local noise control regulations. In 1974 EPA provided information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. Maryland's Environmental Noise Act of 1974 limits noise to that level which will protect the health, general welfare, and property of the people of the state. The state limits both

the overall noise environment and the maximum allowable noise level for residential, industrial, and commercial areas (COMAR 26.02.03). Maximum levels may not exceed 65 dBA in the daytime and 55 dBA at night in residential areas. In addition, the DNL may not exceed 55 dBA in residential areas and 64 dBA in commercial areas. For construction and demolition activities, a person may not cause or permit noise levels that exceed 90 dBA during daytime hours (7 a.m. to 10 p.m.; COMAR 26.02.03). Prince George's County has a noise ordinance that limits noise to 85 dBA in residential areas.

Existing noise levels (as DNL) were estimated for the areas surrounding the site of the proposed action using the existing aircraft noise contours for JBA. Table 3-2 outlines the land use category and the estimated background noise levels for nearby noise-sensitive areas (JBA 2011).

Table 3-2. Estimated background noise levels at nearby noise-sensitive areas

Closest noise-sensitive area				Estimated existing sound levels [DNL (dBA)]
Location	Distance	Direction	Type	
Taxiway Whiskey	2,060 feet	West	Residential	<65
Taxiway W-1	4,000 feet	Southwest		
Taxiway W-4	3,680 feet	West		
Taxiway Charlie West	2,400 feet	West		
Concrete Batch Plant	2,296 feet	Northeast		60

Source: JBA 2011.

3.1.2 Environmental Consequences

Proposed Action. No significant adverse effects on the noise environment would be expected if the proposed action was implemented. Short-term negligible adverse effects would be expected. Short-term increases in noise would occur due to construction and demolition activities during the widening of Taxiway Whiskey and the connecting taxiways (W-1, W-4, and Charlie West), as well as the utility relocations and upgrades. Table 3-3 presents typical noise levels (in dBA at 50 feet) that EPA has estimated for the main phases of outdoor construction. Individual pieces of construction and demolition equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction and demolition sites. The zone of relatively high construction noise typically extends to distances of 400 to 800 feet from the site of major equipment operations. The existing concrete batch plant located off Nevada Avenue, away from residences, would be used for this project.

Table 3-3. Noise levels associated with outdoor construction

Construction phase	L _{eq} (dBA)
Ground clearing	84
Excavation, grading	89
Foundations	78
Structural	85
Finishing	89

Source: USEPA 1971.

There are no noise sensitive receptors within 800 feet of any of the demolition/construction activities, and nearby noise sensitive areas would not experience appreciable amounts of construction noise. At these distances, heavy equipment noise would be audible but distant during

the quieter periods of the day. Numerous truck trips would be required to remove the concrete along the designated haul routes, which are closer to noise-sensitive areas than the construction activities would be. Truck traffic along these routes would be audible at some locations, having minor adverse effects. Construction noise, however, would be in an area of ongoing aircraft operations, which would combine with and partially mask the construction noise, minimizing an already limited effect.

No long-term change in the overall noise environment (e.g., L_{eq} , A-weighted DNL) at JBA would be expected after the proposed action is completed when the larger aircraft begin using JBA. There is at the time no information on how many of the planes would use JBA or how many flights attributable to the larger aircraft would be made annually at JBA. However, the larger aircraft expected to use JBA are modified versions of commercial aircraft whose noise levels are regulated. The FAA reports that exposure to significant noise levels was reduced by approximately 90 percent between 1975 and 2000, primarily because of transitions to newer generation aircraft that produce less noise (FAA 2014). Modern aircraft must also meet the regulatory noise levels. It is therefore unlikely that noise contours at JBA would change as a result of the larger aircraft using the base. There would be no new permanent sources of noise. Widening of the existing taxiways would not require reconfiguration of the existing land use, and would not change the nature or levels of noise attributable to aircraft that use the base now.

No Action Alternative. No effects on the noise environment would result from selecting the No Action Alternative. No construction and demolition would be undertaken. Noise conditions would remain unchanged when compared to existing conditions.

3.2 AIR QUALITY

3.2.1 Affected Environment

EPA Region 3 and the Maryland Department of the Environment (MDE) regulate air quality in Maryland. The Clean Air Act (42 U.S.C. 7401–7671q), as amended, assigns EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS; 40 CFR Part 50). The NAAQS specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants that contribute to chronic health effects. Although each state has the authority to adopt standards stricter than those established under the Federal program, the State of Maryland has accepted the Federal standards.

EPA designates Air Quality Control Regions (AQCRs) in violation of the NAAQS as *nonattainment* areas and AQCRs with levels below the NAAQS as *attainment* areas. According to the severity of the pollution problem, O_3 and PM_{10} nonattainment areas may be categorized as marginal, moderate, serious, severe, or extreme.

Prince George's County (and therefore all areas associated with the proposed action) is within the National Capital Interstate AQCR, AQCR 47 (40 CFR 81.12). EPA has designated Prince George's County as moderate nonattainment for the 1997 8-hour O_3 NAAQS, marginal nonattainment for the 2008 8-hour O_3 NAAQS, and nonattainment for the 1997 $PM_{2.5}$ NAAQS (USEPA 2015a). The CO maintenance area for the District of Columbia extends to Prince Georges County's election districts 2, 6, 16, 17, and 18. JBA is in election district 9 and not within the designated CO maintenance area. Before it was revoked, the area was a severe

nonattainment area for the 1-hour O₃ NAAQS. In addition, the county is located in the Ozone Transport Region, which includes 12 states and the District of Columbia. EPA monitors levels of criteria pollutants at representative sites in each region throughout Maryland. For reference purposes, Table 3-4 shows the monitored concentrations of criteria pollutants and the number of exceedances in Prince George's County in 2014.

Table 3-4. Air quality standards and monitored data

Pollutant	Air quality standards Primary/Secondary^a	Number of days standard exceeded 2014^b	Notes
CO			
1-hour (ppm)	35/none	0	Not to be exceeded more than once per year
8-hour (ppm)	9/none	0	
NO₂			
1-hour (ppb)	100/none	0	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Annual Arithmetic Mean (ppb)	53/53	No data	Annual Mean
O₃			
8-hour (ppm)	0.075/0.075	1	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
SO₂			
1-hour (ppb)	75/none	0	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
3-hour (ppb)	None/500	No data	Not to be exceeded more than once per year
PM_{2.5}			
24-hour (µg/m ³)	35/35	No data	98th percentile, averaged over 3 years
Annual arithmetic mean (µg/m ³)	12/15	No data	annual mean, averaged over 3 years
PM₁₀			
24-hour (µg/m ³)	150/150	0	Not to be exceeded more than once per year on average over 3 years
Lead			
Rolling 3-Month Average (µg/m ³)	0.15/0.15	No data	Not to be exceeded

Sources: a: USEPA 2014a; b: USEPA 2014b

Notes: µg/m³=micrograms per cubic meter, CO=carbon monoxide, NO₂=nitrogen dioxide, O₃=Ozone, PM_{2.5}=particulate matter less than 2.5 microns in diameter, PM₁₀=particulate matter less than 10 microns in diameter, ppb=parts per billion, ppm=parts per million, SO₂=sulfur dioxide

JBA is a synthetic minor facility for the purposes of air permitting, and it holds a synthetic minor operating permit (#033-00655A) that expires January 30, 2017. The permit requirements include annual periodic inventory of all significant stationary sources of air emissions for each of the criteria pollutants of concern and greenhouse gases (GHGs). Monitoring and recordkeeping requirements also are included in the permit. For reference purposes, Table 3-5 lists JBA's 2014 facility-wide air emissions from all significant stationary sources.

Greenhouse Gases and Climate Change. The average high temperature in Prince George's County, Maryland is 87 degrees Fahrenheit (°F) in the hottest month, July. The average low temperature is 22 °F in the coldest month, January. Prince George's County has average annual

precipitation of 43.7 inches. The wettest month of the year is May with an average rainfall of 4.3 inches (Idcide 2012).

Table 3-5. 2014 emissions for significant stationary sources at JBA

Pollutant	Emissions (tons/year)
Carbon monoxide (CO)	6.4
Nitrogen oxides (NO _x)	9.8
Volatile organic compounds (VOCs)	4.8
Fine particulate matter (PM _{2.5})	0.2
Fine particulate matter (PM ₁₀)	0.2
Sulfur dioxide (SO ₂)	0.1
Greenhouse gas (GHG)	8,540.3

Source: JBA 2014a

GHGs are components of the atmosphere that trap heat relatively near the surface of the earth and therefore contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide (CO₂), methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Whether rainfall will increase or decrease remains difficult to project for specific regions (USEPA 2015b).

EO 13693, *Planning for Federal Sustainability in the Next Decade*, was signed on 19 March 2015, having as a goal to maintaining Federal leadership in sustainability and GHG emissions reductions. It requires Federal Agencies to promote building energy conservation, efficiency, and management beginning in fiscal year 2016 and through fiscal year 2025. Additionally Federal Agencies are required to improve data center energy efficiency, meet electric and thermal energy requirements with clean energy, improve water use efficiency and management, and pursue GHG reduction from vehicle fleets (FedCenter 2015).

DoD has committed to reducing GHG emissions from non-combat activities by 34 percent by 2020. In addition, the CEQ recently released draft guidance on when and how Federal agencies should consider GHG emissions and climate change in NEPA analyses. The draft guidance includes a presumptive effects threshold of 27,563 tons per year (tpy) (25,000 metric tpy) of CO₂ equivalent emissions from a Federal action (CEQ 2010).

3.2.2 Environmental Consequences

Proposed Action. No significant adverse effects on air quality would be expected if the proposed action was implemented. Short-term minor adverse effects would be expected. The short-term effects would be due to airborne dust and other pollutants generated during the rebuilding/realigning of Taxiways W-1, W-4, and Charlie West; installation of temporary taxiways for Hangars 19 and 20; and removal of Pads 94 and 14, the Compass Rose, and the Hot Cargo Pad. Air quality effects would be minor unless the emissions exceeded the General Conformity Rule *de minimis* (of minimal importance) threshold values, exceeded the GHG threshold in the draft CEQ guidance, or contributed to a violation of any Federal, state, or local air regulation.

Under a 1990 amendment to the Clean Air Act, commonly known as the General Conformity Rule, Federal actions in nonattainment and maintenance areas are required to conform to the applicable State Implementation Plan. A Federal action is exempt from the General Conformity Rule requirements if the action's total net emissions are below the *de minimis* levels or are

otherwise exempt per 40 CFR 51.153. Total net emissions include direct and indirect emissions from all stationary point and area sources, construction sources, and mobile sources caused by the Federal action. The General Conformity Rule applies to the proposed action because Prince George’s County is moderate nonattainment for 8-hour O₃ (1997) and marginal nonattainment for 8-hour O₃ (2008). An applicability analysis has been performed and has determined the criteria pollutants are all below the General Conformity Rule *de minimis* thresholds.

Construction and demolition emissions were estimated for fugitive dust, on- and off-road diesel equipment and vehicles, crushing concrete on site during demolition, concrete batch plant operations, material handling, worker trips, and heavy truck operations (Table 3-6). Only cutback asphalt is an appreciable source of volatile organic compound (VOC) emissions during any paving operation, and it is prohibited (except as a penetrating prime coat) under state regulations applicable to the region (USEPA 1995, COMAR 26.11.11.02). The estimated emissions from the proposed action would be below the *de minimis* thresholds and a formal conformity determination is not required. These effects would be minor. Detailed emission calculations are in Appendix B.

Table 3-6. Estimated air emissions compared to *de minimis* thresholds

Activity/Source	CO ^a	NO _x	VOC ^b	SO _x ^a	PM ₁₀ ^a	PM _{2.5} ^a
Construction emissions (tpy)	6.40	6.86	0.70	<0.1	10.07	0.68
<i>De minimis</i> thresholds (tpy)	100	100	50	100	100	100
Exceeds <i>de minimis</i> threshold? (yes/no)	N/A	No	No	N/A	N/A	N/A
Operational emissions	None					

Notes:

CO = carbon monoxide, *de minimis* = of minimal importance, N/A=not applicable, NO_x = oxides of nitrogen, PM_{2.5} = particulate matter less than 2.5 microns in diameter, PM₁₀ = particulate matter less than 10 microns in diameter, SO_x = oxides of sulfur, tpy = tons per year, VOC = volatile organic compound.

^a Although the general conformity rule does not apply to these pollutants, they have been compared to the applicability thresholds to determine the level of effects under NEPA.

^b Because the project is in the Ozone Transport Region, the *de minimis* threshold for VOC is 50 tpy.

Although demolition and construction activities of the Proposed Action would be conducted from 2016 through 2019, for the purpose of determining the maximum quantity of emissions that could be emitted during a given year, it was estimated that most emissions would occur in 2016 and would be a result of conducting all required demolition, hauling all the demolished material to the batch plant, and preparing the site for construction. Therefore, regardless of the ultimate implementation schedule, annual emissions would be less than *de minimis* thresholds and the general conformity rules would not apply. Small changes in ultimate design and moderate changes in quantity and types of equipment used would not substantially change these emission estimates; nor would they change the determination under the General Conformity Rule or level of effects under NEPA.

MDE outlines requirements with which a contractor must comply during construction, such as controlling fugitive dust and open burning. Construction and demolition would proceed in full compliance with current MDE requirements, with compliant practices and/or products. These requirements include the following:

- Visible emissions (COMAR 26.11.06.02)
- Asphalt paving operations (COMAR 26.11.11.02)
- Open fires allowed without authorization (COMAR 26.11.07.05)
- Portable fuel containers (COMAR 26.11.13.07)
- Architectural coatings (COMAR 26.11.33.00)
- Consumer products (COMAR 26.11.32.00).

This list is not all-inclusive; the Air Force and any contractors would comply with all applicable air pollution control regulations.

Construction dust or emissions from construction equipment could pose a short-term hazard to aviation by reducing visibility. Dust could result when wind disturbs uncovered fill or open excavations. Trucks and equipment traveling on unimproved construction roads could also stir up dust, impairing visibility. All precautions to control fugitive dust emissions from construction materials and activities would be managed so as to minimize the production of dust, glare, and smoke. All persons responsible for any operation, process, handling, transportation, or storage facility that could result in fugitive dust would take reasonable precautions to prevent such dust from becoming airborne. Reasonable precautions might include using water to control dust from building construction and demolition, road grading, or land clearing.

Greenhouse Gases and Climate Change. GHG missions resulting from construction activities would be the highest in 2016 and generate approximately 674 tons (611 metric tons) of GHG, which would be below the CEQ threshold. There would be no changes in operational GHG emissions. These effects would be minor.

No Action Alternative. No effect on air quality would result from selecting the No Action Alternative. There would be no short- or long-term changes in emissions because the proposed demolition and construction would not occur. Ambient air quality would remain unchanged when compared to existing conditions.

3.3 SAFETY AND OCCUPATIONAL HEALTH

3.3.1 Affected Environment

Potential safety issues at JBA include Anti-terrorism/Force Protection (AT/FP), explosive, flight, and construction jobsite safety associated with activities conducted at the Base. The JBA General Plan specifically describes safety and security requirements that have been implemented for various areas of the installation. General security and safety requirements are incorporated into all projects.

Day-to-day operation and maintenance activities conducted at JBA are performed in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health requirements. In addition, DoD and the Air Force have developed force protection guidelines for military installations as a result of terrorist activities—*DoD Minimum Antiterrorism Standards for Buildings (UFC 4-010-01)* and *USAF Installation Force Protection Guide*.

All contractors performing construction activities are required under the terms of their contracts to comply with Air Force safety and Occupational Safety and Health Administration (OSHA) regulations. They are required to conduct construction activities in a manner that does not pose any undue risk to workers or personnel. Industrial hygiene programs address exposure to hazardous materials (HAZMAT), use of personal protective equipment, and use and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplaces; to monitor exposure to workplace chemical (e.g., asbestos, lead, HAZMAT), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; to recommend and evaluate controls (e.g., ventilation, respirators); to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures or engaged in hazardous waste work. Coordination of the work with JBA personnel and the JBA project manager ensures compliance with these requirements.

The deteriorating condition of JBA airfield taxiway pavements causes increased risk of FOD to aircraft and to safety of the mission and airfield personnel. Because of the continuing deterioration of the pavements, the taxiways are continually undergoing emergency repairs, causing mission delays.

3.3.2 Environmental Consequences

Proposed Action. Long-term minor beneficial effects would be expected. The proposed action would replace deteriorating taxiway pavement and upgrade select airfield utility services. This would minimize FOD potential, improve airfield utility services efficiency, and reduce the occurrence of flight mission delays (caused by deteriorating taxiway conditions) and improve airfield personnel's ability to safely accomplish their critical role in the JBA mission.

No Action Alternative. Long-term minor adverse effects would be expected from continued airfield operation on deteriorating taxiway pavement that would increase the risk for FOD and associated potential damage to aircraft and safety of the mission and airfield personnel. Because of the deterioration of the pavement, the taxiway would continue to undergo emergency repairs when needed which can cause mission delays.

3.4 EARTH RESOURCES

3.4.1 Affected Environment

Geology. The Coastal Plain of southern Maryland, on which JBA is located, is composed of unconsolidated sedimentary geologic units that range in age from the Quaternary Period (1.5 million years ago) to the Cretaceous Period (144 to 65 million years ago). These geologic units are made of unconsolidated sand, gravel, silt, clay, and organic materials that overlay bedrock. The surficial geologic deposits range in thickness from 10 to 20 feet and include irregularly bedded cobbles, gravel, and fine sand that are mixed with silt and clay. Surface formations at JBA have largely been previously disturbed by grading activities in support of facility construction.

Topography. JBA is on the western side of the middle Atlantic Coastal Plain Physiographic Province, which is characterized by generally level to gently sloping terrain with local relief of less than 100 feet, except in association with steep stream banks. JBA sits on a plateau between the Anacostia River and the Patuxent River. Surface elevations at the Base range from about 215 feet above mean sea level (msl) to 281 feet above msl. The surface elevation of the airfield lies at between 240 and 280 feet above msl (USGS 2011).

Soils. Because of the considerable amount of development over the years at JBA, approximately 50 percent of the soils on the Base are categorized as Udorthents, signifying land that is altered by disturbance to the extent that the original soil series cannot be identified. The U.S. Department of Agriculture, Natural Resources Conservation Service, has classified the soils of the airfield as Udorthents (USDA-NRCS 2012). These soils are described as being loamy with a 5 to 15 percent slope, well drained, not susceptible to flooding or ponding, and with a depth to restrictive feature of more than 80 inches.

3.4.2 Environmental Consequences

Proposed Action. No significant adverse effects on geology, soils, or topography on JBA would be expected if the proposed action was implemented. Short-term minor adverse effects on soils would be expected from implementing the proposed action. Soils within the project area would be disturbed during construction, but sediment and erosion control measures meeting MDE criteria, including the mandatory implementation of environmental site design features to the maximum extent practicable to prevent the degradation of surface waters through sedimentation, would be implemented during execution of the project. Construction projects that disturb an area of more

than 5,000 square feet require MDE's approval of a sediment and erosion control plan. Erosion control measures in accordance with the MDE's *Erosion & Sediment Control Guidelines for State and Federal Projects* would be implemented during construction. A set of construction plans, including a detailed sediment and erosion control plan, would be provided to the Water Management Administration of MDE for approval. The approved sediment and erosion control plan would be part of the National Pollutant Discharge Elimination System (NPDES) permit, which would also serve as the project stormwater pollution prevention plan.

No Action Alternative. No effects on geology, topography, or soils would be expected from implementing the No Action Alternative. No soil disturbance would result under the No Action Alternative.

3.5 WATER RESOURCES

3.5.1 Affected Environment

Surface Water. The main base portion of JBA is within portions of the Potomac River and Patuxent River watersheds. Most of the Base, including the areas that would be disturbed under the proposed taxiway actions, is in the drainage of Piscataway Creek, a tributary of the Potomac River (Figure 3-1).

Piscataway Creek, to which most of the airfield stormwater runoff drains, is identified by Maryland as an impaired water under Section 303(d) of the federal Clean Water Act. The creek is identified as being impaired by bacteria and biological causes in its non-tidal portions. The

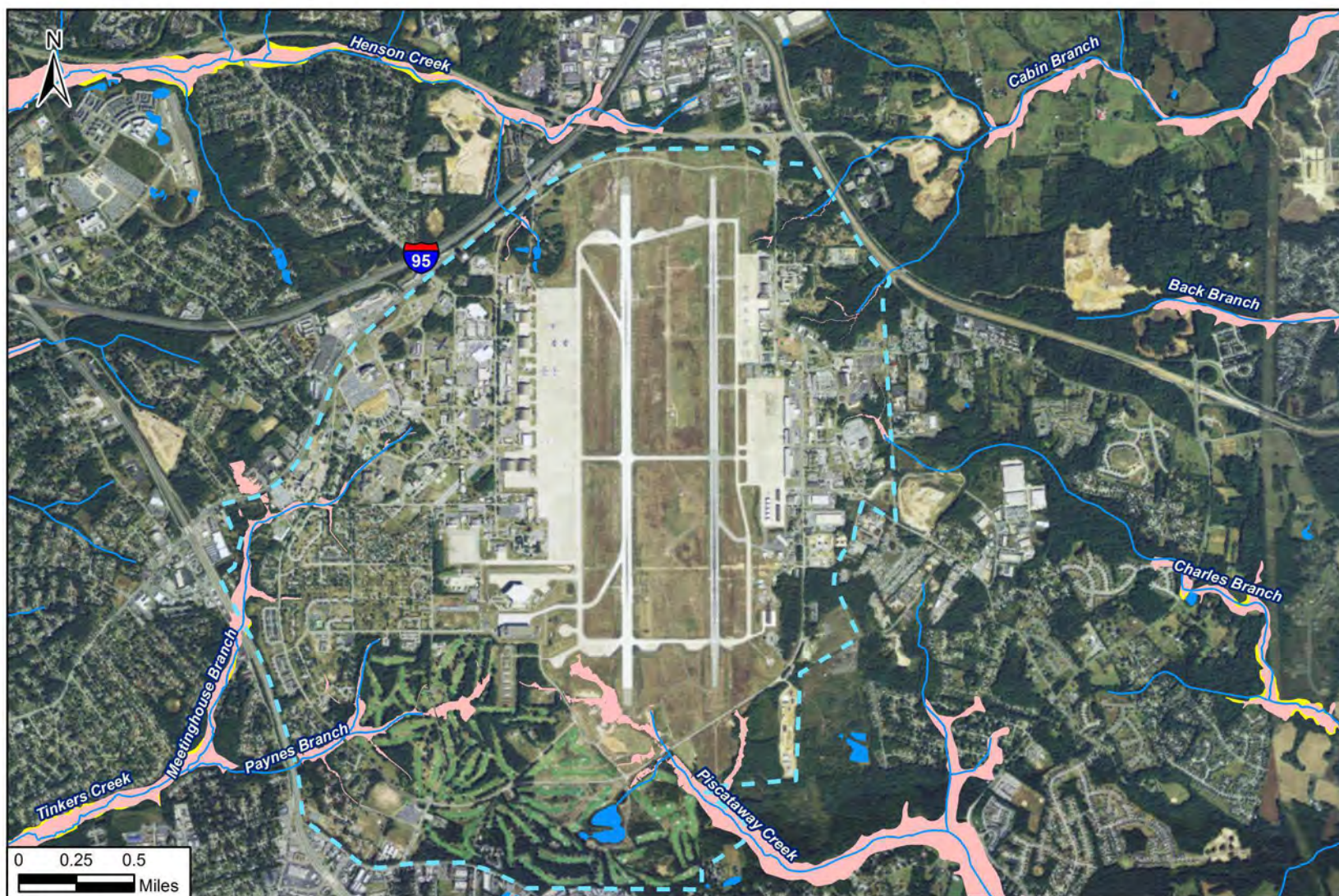
Piscataway Creek watershed is impaired in nontidal areas by bacteria and biological elements (MDE 2012). A Total Maximum Daily Load (TMDL) for bacteria has been prepared for the nontidal portion of Piscataway Creek, and a TMDL for biological elements will be prepared.

EPA published regulations addressing stormwater discharges under the NPDES permitting program. EPA delegated to MDE the authority to administer the NPDES program in Maryland. JBA maintains coverage under MDE's General Discharge Permit (GDP) for industrial activities (GDP No. 02-SW) and under MDE's GDP for discharges by Municipal Separate Stormwater Sewer System operators (No. 05-SF-5501). JBA is also required to comply with the requirements of EPA's Chesapeake Bay TMDL and EO 13508, *Chesapeake Bay Protection and Restoration*.

Groundwater. Regional water-supply aquifers are several hundred feet below ground surface. Groundwater underlying the main base occurs at or near the ground surface, with shallow groundwater occurring at depths of less than 20 feet below ground surface, likely under unconfined conditions. Groundwater recharge occurs primarily through precipitation.

Floodplains. Floodplains on JBA are generally limited to small streams and the area immediately adjacent to the streams. A small area of the 100-year floodplain for Piscataway Creek is within the project area south of Taxiway Whiskey, between the Hot Cargo Pad and Pad 94 (Figure 3-2).

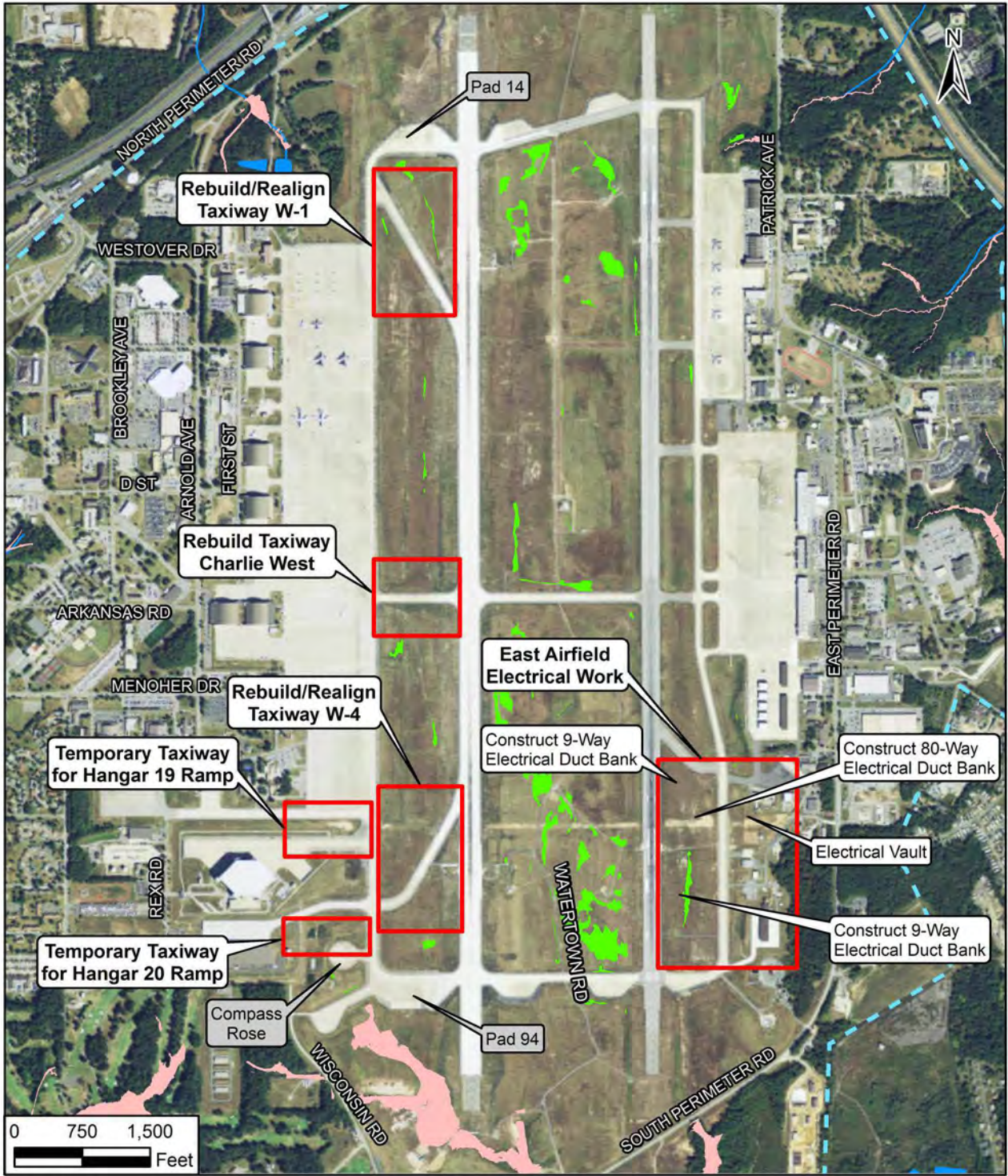
Wetlands. EO 11990 (*Protection of Wetlands*) directs Federal agencies to minimize the destruction, loss, and degradation of wetlands and to preserve and enhance the natural and beneficial values of wetland communities. EO 11990 also requires a Federal agency to prepare a FONPA when there is no practicable alternative to construction in a wetland. The lack of alternatives other than the proposed action is discussed in section 2.3. In accordance with the Clean Water Act (33 U.S.C. 1251 *et seq.*), projects at JBA that involve dredging or filling wetlands would require section 404 permits from the U.S. Army Corps of Engineers (USACE) and a Nontidal Wetland Permit from MDE.

**LEGEND**

- JBA Boundary
- Surface Water
- 100-Year Floodplain
- 500-Year Floodplain

Surface Water**Figure 3-1**

Source: ESRI 2013; JBA GIS 2014; NHD 2015.



Wetlands and Floodplains

Source: ESRI 2013; JBA GIS 2014.

JBA-NAF Washington, Maryland

Figure 3-2

September 2015

Wetlands identified on JBA include palustrine forested wetlands and palustrine emergent wetlands, both of which are present primarily along streams and drainageways. Some palustrine scrub/shrub wetlands and palustrine unconsolidated bottom wetlands have also been identified on the Base (89 AW 2004). The USACE re-delineated wetlands on the airfield in 2012. Six areas of wetlands and wetland buffer are within the limits of the project area (Figure 3-2). The wetland areas identified within the project boundaries are palustrine emergent wetlands—marshy areas with herbaceous wetland vegetation. The wetlands of the airfield alter stormwater flow patterns, retain sediment and toxics that might be in stormwater, remove nutrients from stormwater, recharge groundwater, and provide a limited amount of wildlife habitat.

Coastal Zone. JBA is within the designated Maryland coastal zone. When a federal agency conducts an activity or development project, or has an activity performed by a contractor for the benefit of the federal agency, the agency must determine whether its activities are reasonably likely to affect any coastal use or resource and to conduct the activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of the applicable state coastal program. The federal agency must provide a consistency determination and supporting materials to the state Coastal Zone Management Program agency at least 90 days before starting the proposed activity (unless a different arrangement has previously been made between the federal agency and the authorized state agency) (Ghigiarelli 2004). An assessment of the consistency of the proposed activities with the enforceable policies of the Maryland Coastal Program is in Appendix D.

3.5.2 Environmental Consequences

Proposed Action. No adverse effects on surface waters or groundwater would be expected under the proposed action. No permanent structures would be placed in a navigable waterway, so compliance with the Rivers and Harbors Act of 1899 is not applicable to this proposed action. JBA and its contractors would implement measures to protect water quality in accordance with the *Maryland Stormwater Management Guidelines for State & Federal Projects*. Stormwater best management practices (BMPs) used would ensure that the characteristics of stormwater runoff from the impervious surface areas of the completed taxiways would not differ appreciably from predevelopment characteristics. An MDE-approved sediment and erosion control plan would be developed to ensure that there would be no project-related bacteria or biological releases into the waters of Piscataway Creek and no discharges that would impair or degrade the water quality of Piscataway Creek. A stormwater detention pond at the southern end of Taxiway Whiskey would be modified to retain the stormwater from pavements at the southern end of Taxiway Whiskey, including the new Taxiway Whiskey 6 serving Hangar 20. The taxiway work would be accomplished in accordance with EO 13693, Planning for Federal Sustainability in the Next Decade; the Energy Independence and Security Act of 2007; and the current version of the *Maryland Stormwater Management Guidelines for State & Federal Projects*. A sediment and erosion control plan approval by MDE would be implemented.

No adverse effects on floodplains would be expected under the proposed action. EO 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The intent of the EO is to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. Under the proposed action a temporary haul route would pass through a small area of the 100-year floodplain of Piscataway Creek. Use of the haul route would not create a risk of flood loss or an impact on human safety, and would not diminish the natural or beneficial values of the floodplain. EO 13690 encourages federal agencies to plan projects considering a larger flood zone

(e.g., the 500-year floodplain), but the final version of EO 13690 had not been issued at the time this EA was finalized.

Adverse effects on wetlands would be mitigated to non-significance. A 2012 USACE delineation of wetlands on the airfield indicates that the work to replace, realign, and demolish pavements along Taxiway Whiskey would permanently impact approximately 0.7 acre of wetlands and 1.8 acres of wetland buffer. No wetlands would be disturbed by demolishing Pads 14 and 94 and the Compass Rose. JBA would obtain permits for the wetlands impacts from USACE and MDE and work with the agencies to define mitigation. It is anticipated that the taxiway upgrade project will qualify for a Nationwide Permit because of the small amount of wetlands impacted. A Joint Permit Application would be prepared and submitted to the MDE and the USACE Baltimore District. A draft FONPA for the wetland impacts caused by the proposed project has been prepared. JBA or its contractor would comply with any mitigation requirements of the USACE and MDE permits for the wetland impacts associated with the proposed project.

No Action Alternative. No effects on surface waters, groundwater, floodplains, or wetlands would be expected from implementing the No Action Alternative. No ground disturbance would occur under the No Action Alternative, so there would be no impacts on water resources.

3.6 INFRASTRUCTURE/UTILITIES

3.6.1 Affected Environment

JBA is served by all utility services—water, wastewater, gas, electricity, and communications—but not all the system infrastructures are present within the proposed project area. The area within which the taxiway work would occur contains elements of the fire protection water system, the aviation fuel infrastructure, and the airfield lighting infrastructure. Elements of other infrastructure systems on JBA (e.g., natural gas, sanitary sewer, potable water) would be unaffected by the proposed action.

3.6.2 Environmental Consequences

Proposed Action. No adverse effects on infrastructure elements would be expected from implementing the proposed action. The electrical duct bank serving the western portion of the airfield would be relocated to the north of Taxiway W-2 and a new East Electrical Vault would be constructed to power the circuits on the east side of the airfield. There are currently not enough spare regulators in the West Electrical Vault to provide power for the new circuits on Taxiway Whiskey. The east side work would include installing a new 80-way duct bank connecting the East Electrical Vault to manholes between the East Runway and Taxiway Echo. As a result the airfield lighting system would be improved over the pre-construction configuration.

The aviation fuel line and maintenance pit adjacent to Taxiways Whiskey and Charlie would be relocated. The privatized water utility line that provides fire protection along Taxiway Whiskey would be relocated. These improvements would cause at most temporary interruptions in service but would have no adverse effects on the affected systems.

The airfield stormwater drainage system is to be repaired and an EA concerning that project has been completed (JBA 2015). The project would be coordinated with these taxiway improvements to ensure that no duplicative work is required. That is, stormwater lines within the footprint of the work proposed in this EA would be repaired or replaced during the appropriate phase of the Taxiway Whiskey work.

No Action Alternative. No effects on infrastructure systems would be expected under the No Action Alternative. No infrastructure or utility systems would be disturbed if the No Action Alternative was implemented.

3.7 TRANSPORTATION

3.7.1 Affected Environment

Transportation near JBA is achieved mainly via road and street networks and pedestrian walkways. Regional access is provided by Interstate (I)-95 and I-495. State routes that provide access to the area include Route 337, 223, 4, and 5. Pearl Harbor Drive, Perimeter Road, Wisconsin Road, Watertown Road, Fetchet Avenue, Patrick Avenue, Fairbanks Street, and Nevada Avenue provide direct access to the sites. The average annual daily traffic (AADT) is the average number of vehicles traveling along a roadway each day. Table 3-7 lists the routes near the proposed sites and in the area along with their AADT. Some of the nearby roadways are congested during peak traffic periods.

Table 3-7. Existing AADT on nearby roadways

Roadway	Average annual daily traffic (AADT) [vpd]
Route 337	31,940
Route 4	70,281
Route 5	122,881
I-495	187,912
I-95	213,000

Sources: MSHA 2014, VDOT 2013.

Note: vpd = vehicles per day.

Air, Rail, and Public Transportation. The closest international airport is Ronald Reagan Washington National Airport, which is 15 miles away and average 847 operations per day (AirNav 2014). Other nearby airports are Baltimore-Washington International Airport and Washington Dulles International Airport.

The closest Amtrak stations are 12–14 miles from JBA in Alexandria, Virginia; New Carrollton, Maryland; and the District of Columbia.

Three public agencies provide transit service to the area surrounding JBA: Washington Metropolitan Area Transit Authority, the Maryland Transit Administration, and “The Bus” of Prince George’s County. Commuters must walk to and from any public transit stops and through the entry control facilities to their Base destination or JBA shuttle stop. Two bus routes have at least two stops within a quarter-mile of the intersection of Suitland Road and Allentown Road outside the Main Gate at JBA (JBA 2011).

3.7.2 Environmental Consequences

Proposed Action. No significant adverse effects on the JBA or surrounding transportation system would be expected if the proposed action was implemented. Short-term minor adverse effects would be expected. Short-term effects would be caused by additional truck traffic and day-labor traffic during construction and demolition. The taxiway work and the utility relocations and upgrades would have no appreciable effect on local air, rail, or public transportation.

Construction and demolition activities would have short-term minor adverse effects on transportation and traffic. These effects would be due to worker commutes and delivery of

equipment and materials to and from the staging areas, the batch plant, and the construction sites. On average, there would be up to 20 trucks per day to and from the staging areas and worksites delivering concrete, raw materials, and supplies. During construction, traffic would increase on off-base roadways leading to Pearl Harbor Gate (Routes 223, 4, and Dowe House Road) and on haul routes. Contractors would depart the airfield when necessary. The airfield could experience minor delays in operations, and some temporary runway and taxiway closures would occur. These effects would be temporary in nature and would stop with the end of the project.

The existing transportation infrastructure is sufficient to support any increase in vehicle traffic attributable to the proposed action. Contractors would schedule construction and demolition vehicles to minimize conflicts with other traffic and airfield operations and would use pre-existing haul routes for most of the work. All construction and demolition vehicles would be equipped with backing alarms, two-way radios, and “Slow Moving Vehicle” signs when appropriate.

No Action Alternative. No effects on the transportation system would result from selecting the No Action Alternative. No construction or demolition would occur, and no changes in transportation would take place. Traffic and transportation conditions would remain unchanged when compared to existing conditions.

3.8 HAZARDOUS MATERIALS AND WASTES

3.8.1 Affected Environment

The term *hazardous materials* refers to substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the term *hazardous waste* refers to wastes defined as hazardous by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA). Hazardous materials are substances that, because of their quality, concentration, or physical, chemical, or infectious characteristics, could present substantial danger to public health or the environment when released into the environment. Under 40 CFR Part 261, hazardous wastes that are regulated under RCRA are defined as solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that either are listed or exhibit one or more of the hazardous characteristics. Petroleum products—including petroleum-based fuels, oils, and their wastes—are not covered under CERCLA but might be covered under RCRA. Issues associated with hazardous materials and wastes typically center on waste streams; underground storage tanks; aboveground storage tanks; and the storage, transport, use, and disposal of pesticides, fuels, lubricants, and other industrial substances.

Hazardous and Petroleum Wastes. Operations conducted at JBA require the use and storage of hazardous materials, primarily associated with aircraft operations. The 11th Wing and its tenants produce more than 2,000 pounds of hazardous waste per month. Primary types of hazardous wastes generated include batteries, used fuel and oil, solvents, fluorescent bulbs, rags, fuel filters, and solvent-contaminated solids. Most of the hazardous waste is generated as a result of aircraft operations. JBA is regulated as a large-quantity generator of hazardous wastes under EPA identification number MD0570024000.

Three Environmental Restoration Program (ERP) sites are of concern with respect to the Proposed Action. Near the southern end of Taxiway Whiskey is Fire Training Area Number 1 (FT-02), where the chemicals of concern (COCs) in the groundwater are trichloroethylene (TCE), tetrachloroethene (PCE), vinyl chloride, carbon tetrachloride (CTC), and chloroform. Another site, Former Fire Truck Maintenance Facility (SS-28), is located in the vicinity of where taxiway work for Hangars 19 and 20 and the work on Taxiways Charlie West and W-4 would occur. The COCs for SS-28 are benzene, CTC, chloroform, 1,2-dichloroethane, and TCE. A third site, Fire Training Area Number 4 (FT-04), is at the southeastern corner of the airfield in the vicinity of

where the East Electrical Vault work would occur. COCs at FT-04 are benzene, CTC, arsenic, and manganese. Land Use Controls (LUCs) are used at ERP sites to limit human exposure to contaminants.

3.8.2 Environmental Consequences

Proposed Action. No adverse effects on hazardous materials and wastes would be expected if the proposed action was implemented. Within the area where TCE is present in the groundwater, cuttings from borings advanced into contaminated soils would be stockpiled and tested. TCE contaminants generally dilute to lower-than-required remediation levels once exposed to evaporation, so excavation in the TCE layer could be safely accomplished and the excess soils safely wasted. TCE is typically transported through the groundwater table, and it would not be expected that TCE would be encountered in shallow pavement borings.

Some of the work to be accomplished is located at or near LUC areas or monitoring wells. A digging permit would be required. Prior to any digging and as part of the digging permit process, contractors would coordinate with the Environmental Restoration Program (ERP) office to determine whether any monitoring wells are near the work area or whether a LUC waiver letter is required. No digging would occur within 10 feet of any ERP-related wells unless coordinated with the ERP office, and a LUC waiver letter and implementation of appropriate health and safety measures would be required for any digging within a LUC boundary.

Although no adverse effects on hazardous materials and wastes would be expected, short-term minor adverse effects would result if aviation fuel were spilled during relocation of the aviation fuel line. Spillage could cause soil and groundwater contamination and create interruptions in airfield service.

Any materials containing hazardous elements would be handled, stored, and disposed of in accordance with applicable state and federal regulations and by certified, licensed contractors. All non-contaminated solid waste would be separately recycled or disposed of at an appropriate landfill.

No Action Alternative. No effects on hazardous materials and wastes would be expected under the No Action Alternative. No hazardous materials and wastes would be used, stored, or disposed of under the No Action Alternative.

3.9 BIOLOGICAL RESOURCES

3.9.1 Affected Environment

The only vegetative communities on the JBA airfield are the managed landscape areas of the airfield infield and numerous small patches of wetlands. Wetlands are discussed under the Water Resources section of the EA. Other areas of the airfield are developed. There are no sensitive plant communities near the project area.

The wildlife of JBA is typical of the mid-Atlantic region (USACE Baltimore District 2007). Eighty-four bird species have been identified at JBA, including geese, herons, passerines, and birds of prey. Migratory birds, especially waterfowl, are common at the Base because of the ponds and wetlands and the proximity of JBA to the Chesapeake Bay. Reptiles found at JBA include common species of snakes, lizards, and turtles. Mammals known to occur at JBA are also those common in the region, including white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), and several bat species. No animal species are noted in the JBA Integrated Natural Resources Management Plan (USACE Baltimore District 2007) as inhabiting the airfield. White-tailed deer occasion onto the airfield through breaches in the perimeter fence, and JBA has a deer

depredation permit from the Maryland Department of Natural Resources to harvest deer and keep the deer population under control for safety reasons. Birds roost in many hangars and occasional requests made by residents of Base family housing for removal of rats, snakes, bats, Virginia opossums (*Didelphis virginiana*), and raccoons, but if these animals occur on the airfield it is only as transients because of the lack of suitable habitat.

Surveys for rare, threatened, and endangered species have identified 21 rare, threatened, or endangered plant species as occurring on JBA property (USACE Baltimore District 2007). Of those 21 species, only six (the federally listed sandplain gerardia [*Agalinis acuta*] and the state-listed blunt-leaved gerardia [*Agalinis obtusifolia*], Curtiss' three-awn [*Aristida curtissii*], spiral pondweed [*Potamogeton spirillus*], swollen bladderwort [*Utricularia inflata*], and tall nutrush [*Scleria triglomerata*]) have been recorded in the main base area, but none of the occurrences were within the boundaries of the airfield (Figure 3-3) (USACE Baltimore District 2007). During surveys all six species were observed on JBA in 1993, three of the six were observed in 1996–1997, one was observed in 2004, and none were observed in 2006.

The only federally listed species present at JBA is the sandplain gerardia; the only known population of the sandplain gerardia is south of the flightline near the 13th tee of the golf course (USACE Baltimore District 2007). The habitat is protected by fencing and signage that warns of the presence of a protected species. Five state-listed species have been observed at JBA, but none of the species was identified in the most recent survey in 2006. No protected species are supported by habitats within the project area.

3.9.2 Environmental Consequences

Proposed Action. No significant adverse effects on biological resources would be expected from implementing the proposed action. The proposed project would not impact a protected species or affect a natural habitat. (Wetlands are discussed in the Water Resources section.) Minor impacts on wildlife in the vicinity of the airfield would result from noise generated during construction, but the airfield is actively managed for safety reasons to ensure that wildlife does not become resident on it, so no wildlife would be expected to be displaced by implementing the proposed action.

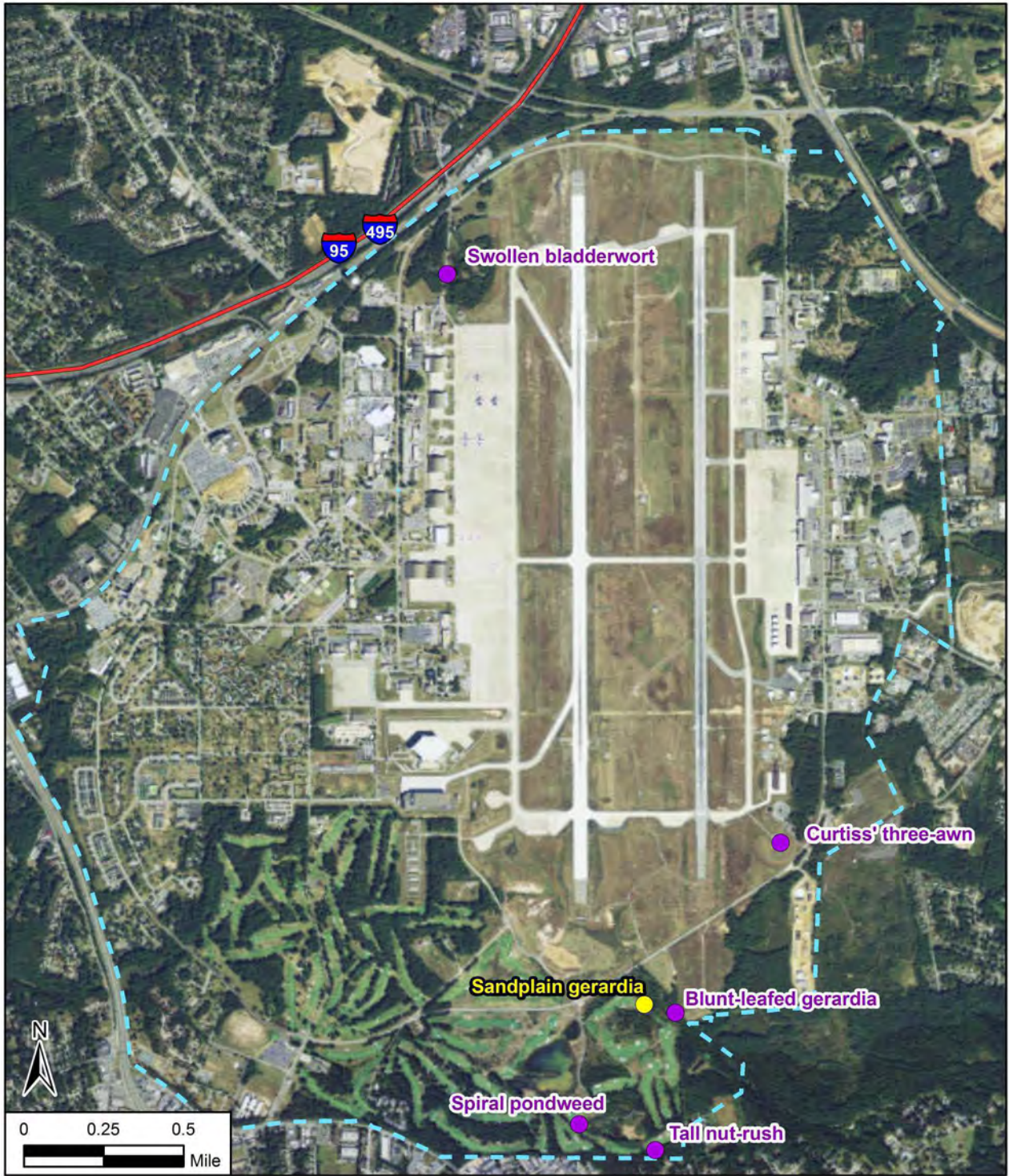
No Action Alternative. No effects on biological resources would be expected from implementing the No Action Alternative. No habitats would be disturbed under the No Action Alternative.

3.10 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES

3.10.1 Affected Environment

For both historical and archaeological resources, the area of potential effects on cultural resources for the purposes of the proposed project in this EA consists of the areas within the work limits for the taxiway replacement and construction work and the demolition work.

One aboveground historic property, Belle Chance (PG:77-14, determined to be eligible for the National Register of Historic Places), has been identified within the boundaries of JBA (USACE Baltimore District 2009). The Belle Chance property includes a 1912 dwelling, two auxiliary buildings, a cemetery, and one historic archaeological site (18PR447). The structures of the property were transferred to a housing privatization contractor in 2007, although the land that encompasses Belle Chance remains within the larger JBA boundary and under Federal ownership. The Belle Chance property is near the northwest boundary of JBA. No historic or archaeological properties are known to be within the footprint of the project proposed in the EA.



Threatened and Endangered Species

Source: ESRI 2013; JBA GIS 2014.

JBA-NAF Washington, Maryland

Figure 3-3

September 2015

3.10.2 Environmental Consequences

Proposed Action. No effects on cultural resources would be expected from implementing the proposed project. No historic or archaeological properties would be disturbed by undertaking the proposed project.

No Action Alternative. No effects on cultural resources would be expected from implementing the No Action Alternative.

3.11 SOCIOECONOMIC AND ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

3.11.1 Affected Environment

This section describes the economic and sociological environment of the region of influence surrounding JBA. A “region of influence” is a geographic area selected as a basis on which social and economic impacts of a proposed action are analyzed. The region of influence for the JBA proposed action is defined as Prince George’s County, Maryland. For comparative purposes, socioeconomic data also is presented for Maryland and the United States.

3.11.1.1 Population

The population of Prince George’s County was about 904,400 in 2014, an increase of 13 percent since 2000. During the same time period (2000–2014), the Maryland and United States populations also grew by 13 percent (U.S. Census Bureau 2000, 2015a).

3.11.1.2 Employment and Income

Employment. The Prince George’s County labor force increased 10 percent between 2004 and 2014, higher than Maryland’s labor force growth of 8 percent and the United States’ labor force growth of 6 percent during the same time period. The county’s 2014 annual unemployment rate was 6 percent, the same as the Maryland and the United States’ unemployment rate (BLS 2015).

The leading Prince George’s County industries (on the basis of total employment by industry) are government and government enterprises; retail trade; health care and social assistance; and construction. Together these four industry sectors account for about 50 percent of the county’s total employment. The government and government enterprises sector (which includes JBA) is the largest sector, accounting for 23 percent of the county’s total employment (BEA 2014). JBA is a major contributor to the regional economy, employing about 14,000 people (military and civilian) and having an annual economic impact of about \$1.2 billion (JBA 2014b).

Income. Prince George’s County income levels were lower or about the same as the state’s but higher than the nation’s. The county’s per capita personal income was \$32,344. This figure was 89 percent of the Maryland state per capita personal income of \$36,354, but 115 percent of the United States’ per capita personal income of \$28,155. Prince George’s County’s median household income of \$73,623 was about the same as the Maryland median household income of \$73,538 but 139 percent of the United States’ median household income of \$53,046 (U.S. Census Bureau 2015a).

3.11.1.3 Environmental Justice and Protection of Children

Environmental Justice. EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, was issued by President Clinton on February 11, 1994. The EO requires federal agencies to take into consideration disproportionately high and adverse environmental effects of governmental decisions, policies, projects, and programs on minority and low-income populations.

Per CEQ guidance, minority populations should be identified when either the minority population of the affected area exceeds 50 percent or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (CEQ 1997b). The U.S. Census Bureau identifies minority populations as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, persons of two or more races, and persons of Hispanic or Latino origin. Minority population data is presented in Table 3-8. As of 2013, 86 percent of the Prince George’s County population was of a minority race or ethnicity. Prince George’s County had a much higher percentage of minority populations than Maryland or the United States, which had minority populations of 47 percent and 37 percent, respectively. The county’s minority population is predominantly comprised of Black or African American (65 percent), followed by Hispanic or Latino (16 percent), and Asian (4 percent) (U.S. Census Bureau 2015a).

Per CEQ guidance, poverty thresholds established by the U.S. Census Bureau are used to identify low-income populations (CEQ 1997b). Poverty status is reported as the number of persons or families with income below a defined threshold level. As of 2014, the U.S. Census Bureau defined the poverty threshold level as \$12,081 or less of annual income for an individual and \$24,221 or less of annual income for a family of four (U.S. Census Bureau 2015b). Poverty data is presented in Table 3-8, with 9 percent of Prince George’s County residents classified as living in poverty, just below the Maryland poverty rate of 10 percent and lower than the national poverty rate of 15 percent.

Table 3-8. Minority and low-income populations

Jurisdiction	Minority population, 2013	All persons below poverty level, 2009-2013
Prince George’s County	86%	9%
Maryland	47%	10%
United States	37%	15%

Source: U.S. Census Bureau 2015a.

Protection of Children. On April 21, 1997, President Clinton issued EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. The EO recognizes that a growing body of scientific knowledge demonstrates that children might suffer disproportionately from environmental health and safety risks because children’s bodily systems are not fully developed; children eat, drink, and breathe more in proportion to their body weight; their size and weight can diminish protection from standard safety features; and their behavior patterns can make them more susceptible to accidents. On the basis of these factors, President Clinton directed each federal agency to make it a high priority to identify and assess environmental health and safety risks that might disproportionately affect children and that each federal agency ensure its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks.

JBA proposes to fully comply with EO 13045 by incorporating the concerns put forth in the order in decision-making processes supporting JBA policies, programs, projects, and activities. In this regard, JBA ensures that it would identify, disclose, and respond to potential adverse social and environmental effects on children in the area affected by a proposed action. Children are present at JBA as residents and visitors (e.g., residing in on-base family housing or lodging, enrolled at on-base child care facilities, attending public events at JBA). Precaution is taken for child safety through a number of means, including using fencing, limiting access to certain areas, and requiring adult supervision. The proposed action would occur on the JBA airfield, which is a

secure, limited access area not open to the public and that is not adjacent to housing or facilities where children typically are present.

3.11.2 Environmental Consequences

3.11.2.1 Population, Employment, and Income (EIFS model results)

Proposed Action. The economic effects of implementing the proposed action are estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to estimate the direct and indirect effects resulting from a given action. Appendix C discusses the methodology in more detail and presents the model inputs and outputs developed for this analysis.

Beneficial effects would be expected on the regional economy under the proposed action, as determined by the EIFS model. Expenditures and employment associated with the proposed action would increase regional employment, income, and sales volume (Table 3-9 and Appendix C). The economic benefits would be short-term, lasting for the duration of the time period necessary to complete the proposed action. Such changes in sales volume, employment, and income would fall within historical fluctuations (i.e., within the Rational Threshold Value [RTV] ranges) and would be considered minor. No effects would be expected on population. The proposed action does not include assigning new permanent military or civilian personnel from outside the region to JBA; therefore, this action would not change the population of JBA or the region.

Table 3-9. EIFS model output

Variable	Projected total change	Percent change	RTV range
Sales (business) volume	\$54,892,770	0.18%	-5.32% to 13.74%
Income	\$10,036,790	0.05%	-4.48% to 11.72%
Employment	231	0.06%	-4.17% to 4.59%
Population	0	0.00%	-0.85% to 3.30%

Source: EIFS model.

No Action. No significant adverse effects on socioeconomics would be expected if the No Action Alternative was implemented.

3.11.2.2 Environmental Justice and Protection of Children

Proposed Action. No effects would be expected. Implementing the proposed action would not result in disproportionate adverse environmental or health effects on low-income or minority populations or children. The proposed action does not have the potential to substantially affect human health or the environment by excluding persons, denying persons benefits, or subjecting persons to discrimination. All activity associated with the proposed action would occur on the JBA airfield, which is a secure area not in close proximity to residential areas, commercial districts, or facilities where children typically are present.

No Action. No social effects on environmental justice or protection of children would be expected. The No Action Alternative would not result in disproportionate adverse environmental or health effects on low-income or minority populations or children.

3.12 LAND USE AND VISUAL RESOURCES

3.12.1 Affected Environment

The JBA main base has 4,346 acres divided into 10 land use classifications. The airfield land use occupies 1,525 acres, or about 35 percent of JBA's main base. The airfield separates JBA's western and eastern sections, which contain all other base land uses. Aircraft operations and maintenance land use borders the airfield to the east and west. Open space and outdoor recreation land uses border the northern and southern ends of the airfield (Infinity Technology and PBS&J 2010).

The designated land use of the airfield and adjacent aircraft operations and maintenance facilities define the visual and aesthetic characteristics of the project site – a flat, open, large rectangular area with paved and grass covered spaces, and aircraft hangar and other airfield support buildings on either side. These man-made developments are necessary to meet the purpose of the site as an airfield. Open space at the northern and southern ends of the airfield is buffer space for the safety of aircraft takeoffs and landings. Open space and local, state, and interstate roads can be seen from the open space at the northern end of the airfield, and from the southern end views are of open space and vegetated areas bordering the JBA golf course.

3.12.2 Environmental Consequences

Proposed Action. No adverse effects on land use would be expected from implementing the proposed action. The proposed projects would occur within the airfield land use area. No areas of JBA would change land use classification because of implementing the proposed action and there would be no conflict with current or future land use plans.

Short-term negligible adverse effects on visual and aesthetic resources would be expected. Construction activity is inherently displeasing; however, the visually disrupting effects would be short-term and localized to the airfield project site, which is already developed and industrial in nature. There is buffer space separating the JBA golf course from the southern end of the airfield.

No Action Alternative. No adverse effects on land use or aesthetic and visual resources would result from implementing the No Action Alternative. No land use changes or conflicts would occur under the No Action Alternative, nor does this alternative involve actions that would change the visual or aesthetic characteristics of the site.

3.13 SUSTAINABILITY AND GREENING

3.13.1 Affected Environment

In accordance with EO 13693, *Planning for Federal Sustainability in the Next Decade*, the Air Force would incorporate sustainability and greening practices by minimizing waste during construction, recycling appropriate materials, and purchasing items produced from recycled materials. EO 13693 is a directive that requires Federal agencies to implement sustainable practices for a variety of water-, energy-, and transportation-related activities and to reduce greenhouse gas emissions. Where possible, the Air Force would incorporate sustainable building and greenhouse-gas-reducing concepts into the engineering design process.

3.13.2 Environmental Consequences

Proposed Action. No effects on sustainability and greening would be expected from implementing the proposed action.

No Action Alternative. No effects on sustainability and greening would be expected from implementing the No Action Alternative.

SECTION 4.0

CUMULATIVE EFFECTS

Cumulative effects on environmental resources result from the incremental effects of an action when combined with other past, present, and reasonably foreseeable future projects in the ROI. Cumulative effects can result from individually minor but collectively substantial actions taken over a period of time. In accordance with NEPA, a discussion of cumulative effects that could result from projects that are proposed or anticipated in the foreseeable future is required.

As an active military installation, JBA and its tenant organizations undergo changes in mission and training requirements in response to defense policies, current threats, and tactical and technological advances, and as such, require new construction, facility improvements, infrastructure upgrades, and ongoing maintenance and repairs on a continual basis. Known or proposed construction and upgrade projects are included in this analysis, although future requirements could change and alter the reality of cumulative effects. NEPA analysis will be conducted for future projects as necessary.

4.1 RESOURCE AREAS OF CONCERN

Table 4-1 summarizes the anticipated effects of the Taxiway Whiskey supplemental projects. Resource areas of concern with respect to cumulative effects include those on which the proposed actions of this EA have an adverse effect.

Table 4-1. Summary of potential environmental effects

Resource Area	Environmental effects
	Proposed action
Air quality	Short-term minor adverse
Noise	Short-term minor adverse
Safety and occupational health	No effects
Earth resources	Short-term minor adverse
Water resources	No effects on surface waters Minor loss of airfield wetlands
Infrastructure and utilities	No effects
Transportation	Short-term minor adverse
Hazardous materials and wastes	No effects
Biological resources	No effects
Cultural resources	No effects
Socioeconomics	Short-term minor beneficial
Environmental justice	No effects
Protection of children	No effects
Land use	No effects
Sustainability and greening	No effects

4.2 PROJECTS POTENTIALLY CONTRIBUTING TO CUMULATIVE EFFECTS

Table 4-2 provides a list of known or proposed projects anticipated to occur in the near future at JBA and notes the estimated year(s) of project implementation.

Table 4-2. Projects that could contribute to cumulative effects

Project Name/Description	Anticipated Fiscal Year					
	2015	2016	2017	2018	2019	2020+
Construct Helicopter Operations Facility	X					
Consolidated Communications Center				X		
Demolish 1558, 1539, 1560					X	X
Construct Type IV Fuel Hydrant System for the Aerospace Control Alert Facility		X	X	X		
21 Point Enclosed Firing Range			X	X		
Security Forces Group Complex						X
Relocate East Runway						2023
Replace Child Development Center #1						X
Base Civil Engineer Complex						X
Replace West Fitness Center				X	X	
Relocate JADOC for New Large Hangar Complex			X			
Relocate MWD K9 Kennels for New Large Hangar Complex			X			
Relocate Hazardous Cargo Pad/EOD Range for New Large Hangar Complex			X			
Construct New Large Hangar Complex				X		
Fire Station Addition for New Large Hangar Complex				X		
Demolish Munitions Storage Area		X	X	X		
Replace USAPAT Facility					X	
Taxiway Whiskey Reconstruction and Extension		X	X	X		
Taxiway Charlie Reconstruction		X	X	X		
Taxiway November Reconstruction		X	X	X		
Replace Airfield Storm Drains	X	X	X	X	X	
Replace East/West Deluge Line		X	X	X		
Repair Paynes Branch			X	X		
Construct EOD Addition		X	X			
Addition to Base Exchange	X	X	X			
Construct Logistics Readiness Squadron Addition		X	X	X		
Construct Chapel Addition		X	X	X		
Construct Facility at Davidsonville		X	X			
Construct Taxi Lane for the Aerospace Control Alert Facility	X	X				
Construct 2 nd Taxiway Hangar 20					X	X
Construct Addition to Visiting Quarters (B 1380)						2020
Upgrade Main, Pearl Harbor, VA, North Gates			X	X		
Demolish Library B 1642		X	X			
Demolish T-Line B 3602		X	X			
Demolish 1713, 3603, 3605, 3808		X	X			
Demolish 1522, 1524, 1527		X	X			
Facility Demolition (Ongoing)	X	X	X	X	X	

4.3 CUMULATIVE EFFECTS ANALYSIS

Most projects have some degree of adverse effect on air quality, and therefore some cumulative adverse effect on air quality from co-occurring projects is always anticipated. The CAA mandates that state agencies adopt SIPs that target the elimination or reduction of the severity and number of violations of the NAAQS. SIPs set forth policies to expeditiously achieve and maintain the NAAQS. Federal agencies are required to ensure that their actions conform to state SIPs. Conformity, as defined in the CAA, means reducing the severity and number of violations of the NAAQS to achieve attainment of the standards for nonattainment regions. EPA has developed two distinctive sets of conformity regulations: one for transportation projects and one for non-transportation projects. Air quality effects—including cumulative effects—are considered minor only when emissions exceeded the general conformity rule *de minimis* threshold values, exceeded the GHG threshold in the draft CEQ guidance, or contributed to a violation of any Federal, state, or local air regulation. *De minimis* thresholds for pollutants are generally 100 tpy (50 tpy for VOCs) (see section 3.2.2). Construction emissions for the Taxiway Whiskey supplemental projects, assuming all projects occurred within a single 12-month period, would still be less than 25 tpy. Most other proposed construction projects, being much smaller in scope, would be expected to have annual pollutant emissions of less than this amount, and the cumulative air emissions from projects anticipated to occur at JBA within any given year would not be expected exceed the *de minimis* levels. They would, therefore, not be significant.

Effects on the noise environment are cumulative when the projects co-occur and are in close enough proximity to one another to contribute to the same noise environment. In general, construction projects are expected to have effects on the noise environment within an 800-foot distance from the project site (see section 3.1.2).

Taxiway Whiskey supplemental projects and the Taxiway Whiskey replacement project would be undertaken simultaneously in a phased approach, so they would have no cumulative effect on noise. Other projects anticipated to occur in the same time frame would not occur on the airfield. Most would take place in the western portion of the base. There would be, therefore, no cumulative effects on noise.

Cumulative impacts on soils occur when projects overlap spatially, although soil loss and conversion of soils from their natural state to an altered state can be considered a regional effect. Projects at JBA that disturb soils, however, are generally not considered to have adverse cumulative effects on soils because the soils at JBA are mostly Udorthents, or soils that have been previously disturbed, may be fill dirt, and no longer have the characteristics of the natural soils of the region. Soil loss from each project undertaken is controlled by the use of Maryland-approved erosion and control measures. Therefore, projects at JBA are generally not considered to have cumulative effects on soils.

All construction or ground-disturbing projects have the capacity to affect water quality in local streams through sediment and pollutant runoff from the construction site. All construction projects on JBA are required to be undertaken in accordance with the Maryland Stormwater Management Guidelines for State and Federal Projects, implementing stormwater BMPs in accordance with an MDE-approved sediment and erosion control plan to ensure that stormwater runoff from construction sites is controlled and impacts on surface waters are minimized. Because all construction projects would be performed in accordance with these requirements, there would be no significant cumulative effects on surface waters.

The projects undertaken in the cantonment area would not affect wetlands. Each of the airfield projects affects some area of wetlands. The Taxiways Sierra and Whiskey replacements, the Taxiway Whiskey supplemental projects, the West Runway replacement project, and repair of the airfield stormwater drainage system have the combined effect of a loss of about 4 acres of

wetlands and two acres of wetland buffer on the airfield (Table 4-3). Each of the projects is permitted separately by MDE and the USACE Baltimore District, and if required, JBA mitigates permanent wetland impacts by in-kind, off-site creation or restoration of wetlands. By complying with the wetland permit requirements of each project, JBA ensures that there are no significant cumulative impacts on wetlands.

Table 4-3. Airfield projects impacts on wetlands

Project	Permanent Wetland Impact (acres)	Permanent Wetland Buffer Impact (acres)	Temporary Wetland Impact (acres)	Temporary Wetland Buffer Impact (acres)
Taxiway Whiskey/ Whiskey Supplemental	0.67	1.79	--	--
Taxiway Sierra	0.36	--	--	--
West Runway	3	--	--	--
Airfield Stormwater System Repair	0.03	0.35	0.84	1.66
Total	4.06	2.14	0.84	1.66

The effect of any project on transportation resources generally occurs as temporary interruptions of traffic patterns because of construction traffic or utility line work. None of the projects anticipated to occur over the next 5 years at JBA would have more than a negligible effect on off-base traffic. Construction traffic flow and utility work along roads would be carefully planned and scheduled by JBA to ensure that all essential traffic flow and routes remain open at critical times. Any cumulative effects that concurrent projects might have, therefore, would be minor.

4.4 UNAVOIDABLE ADVERSE EFFECTS

Unavoidable short-term adverse impacts associated with implementing the proposed action would include temporary erosion and sedimentation from soils disturbance, a temporary increase in fugitive dust and air emissions during construction, intermittent noise, minor alterations to local traffic and airfield operations, and a minor loss of wetlands. Most of these effects would be minor and confined to the immediate area of the project work. Use of environmental controls and implementing controls required in permits and approvals obtained would minimize the potential impacts. Unavoidable, long-term, adverse impacts would occur on up to 2.5 acres of wetlands during the Taxiway Whiskey supplemental projects. The impacts on the wetlands cannot be avoided because the work must be performed at the specific locations on the airfield where the taxiways already exist, and the amount of taxiway expansion and their alignments are specified in regulations.

The proposed action is required to ensure safe airfield operations and to bring the airfield into accordance with FAA regulations and Air Force guidance. No other alternatives would provide the engineering solution to meet the safety standards for this unique mission of national security, international diplomacy, and national capital region readiness.

4.5 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The relationship between short-term uses and enhancement of long-term productivity from implementation of the proposed action is evaluated from the standpoint of short-term effects and long-term effects. Short-term effects would be those associated with the construction activities to repair and realign the Whiskey taxiways and to remove other pavement areas from the airfield. The long-term enhancement of productivity would be those effects associated with improved

airfield operations and lowered maintenance requirements after implementation of the proposed action.

The proposed action would ensure fewer interruptions in aircraft operations at the Base and a lowered probability of FOD accidents and personnel injuries. The negative effects of short-term operational changes during construction activities would be minor compared to the positive long-term benefits of improving airfield safety and bringing the airfield up to modern standards so it can accommodate modern aircraft.

4.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable commitments of resources are those that would be unavoidable if the proposed action were implemented. An irreversible effect results from the use or destruction of resources (e.g., energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e.g., endangered species) that cannot be restored as a result of the proposed action. The short-term irreversible commitments of resources that would occur would include planning and engineering costs, building materials and supplies and their cost, use of energy resources during construction, labor, generation of fugitive dust emissions, and creation of temporary construction noise. For wetland impacts, JBA would replace impacted wetland areas as required under permits.

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SECTION 5.0

LIST OF PERSONS CONSULTED AND PREPARERS

PERSONS CONSULTED AND REVIEWERS

Anne Hodges, JBA, 11 CES/CEIE, NEPA/EIAP Project Manager
Eric Rothermel, JBA, 11 CES/CENMP, Project/Design Engineer Manager
Roumen Lefterov, JBA, 11 CES/CENMP
D.K. Humphreys, JBA, 11 CES/CENPP
Frances Saunders, AFCEC/CZOE
Maryland Department of Planning
U.S. Fish and Wildlife Service
National Capital Planning Commission

PREPARERS

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Years of Experience: 25

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M.S., Environmental Science and Policy, University of Massachusetts/Boston
B.S., Wildlife Biology and Zoology, Michigan State University
Years of Experience: 17

Victor Velazquez
B.S., Chemical Engineering, University of California, Santa Barbara
Years of Experience: 16

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SECTION 6.0

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Appendix A
Interagency and Intergovernmental Coordination for
Environmental Planning

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 11TH WING (AFDW)
JOINT BASE ANDREWS, MARYLAND 20762

12 June 2015

MEMORANDUM FOR SEE DISTRIBUTION

FROM: 11 CES/CEIE
3466 North Carolina Ave
Joint Base Andrews, MD 20762-4803


SUBJECT: Description of Proposed Action and Site Map for Taxiway Whiskey Rebuild
Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, Maryland

1. Joint Base Andrews is preparing an Environmental Assessment (EA) for rebuilding/realigning Taxiway W-1, W-4, and Charlie West, and related tasks at Joint Base Andrews-Naval Air Facility, Washington, MD (JBA) (see Figures 1 and 2, attached). Pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321–4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Sections 1500–1508), and 32 CFR Part 989, et seq., JBA will prepare an EA that considers the potential consequences to human health and the natural environment. The EA will examine the effects of the proposed project and will include analysis of the required no-action alternative.
2. Note that the Air Force previously prepared an EA that analyzed the replacement of Taxiways Sierra and Whiskey (Environmental Assessment for Replacement of Taxiway Sierra, Taxiway Whiskey, Pad 12, and Pad 13 at Joint Base Andrews-Naval Air Facility Washington Prince George's County, Maryland, April 2013), and the supplemental projects of concern in this EA and those of the previous EA are related and interdependent (see Figure 3, attached). The projects will be undertaken in phases, with areas of the taxiways considered in the two EAs (e.g., Taxiway Whiskey, the subject of the previous EA, and Taxiway Whiskey 1, included in this EA) being phased together to avoid duplication of the pavement work where the projects intersect and to minimize disruptions in airfield operations. The cumulative effects of the two projects will be thoroughly considered in the current EA.
3. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we invite your agency to comment on the Proposed Action described in the enclosed attachment and provide any relevant information about resources under your jurisdiction that may be present in the project area as indicated on the new site plan in the attachments.
4. Also enclosed is a copy of the distribution list for those federal, state, and local agencies to be contacted regarding this EA. If you believe any additional agencies should review and comment on this proposal, please feel free to include them in a re-distribution of this letter and the attached materials.

The Chief's Own!

5. An attachment to this letter describes the project being analyzed in the EA. If undertaken, the project will be completed in accordance with applicable federal, state, and local laws and regulations and federal Executive Orders.

6. Your assistance in providing information is greatly appreciated. Please provide written comments within 15 days from the date of this letter to Anne Hodges, 11 CES/CEIE, 3466 North Carolina Avenue, Joint Base Andrews, MD 20762 or send via e-mail to anne.m.hodges2.civ@mail.mil. If you need further information, please contact Ms. Hodges at 301-981-1426.



STEVE RICHARDS
Chief of Environmental Management

Attachments:

Distribution List (listed on next page)

Vicinity Map and Site Plans

Distribution List

Mrs. Linda C. Janey, J.D.
Director, Maryland State Clearinghouse
Maryland Office of Planning, Room 104
301 West Preston Street
Baltimore, MD 21201-2365
ljaney@mdp.state.md.us

Ms. Genevieve Larouche
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 1401

Lucy Kempf, Director
Urban Design and Plan Review Division
National Capital Planning Commission
401 9th Street, NW
North Lobby, Suite 500
Washington, DC 20004

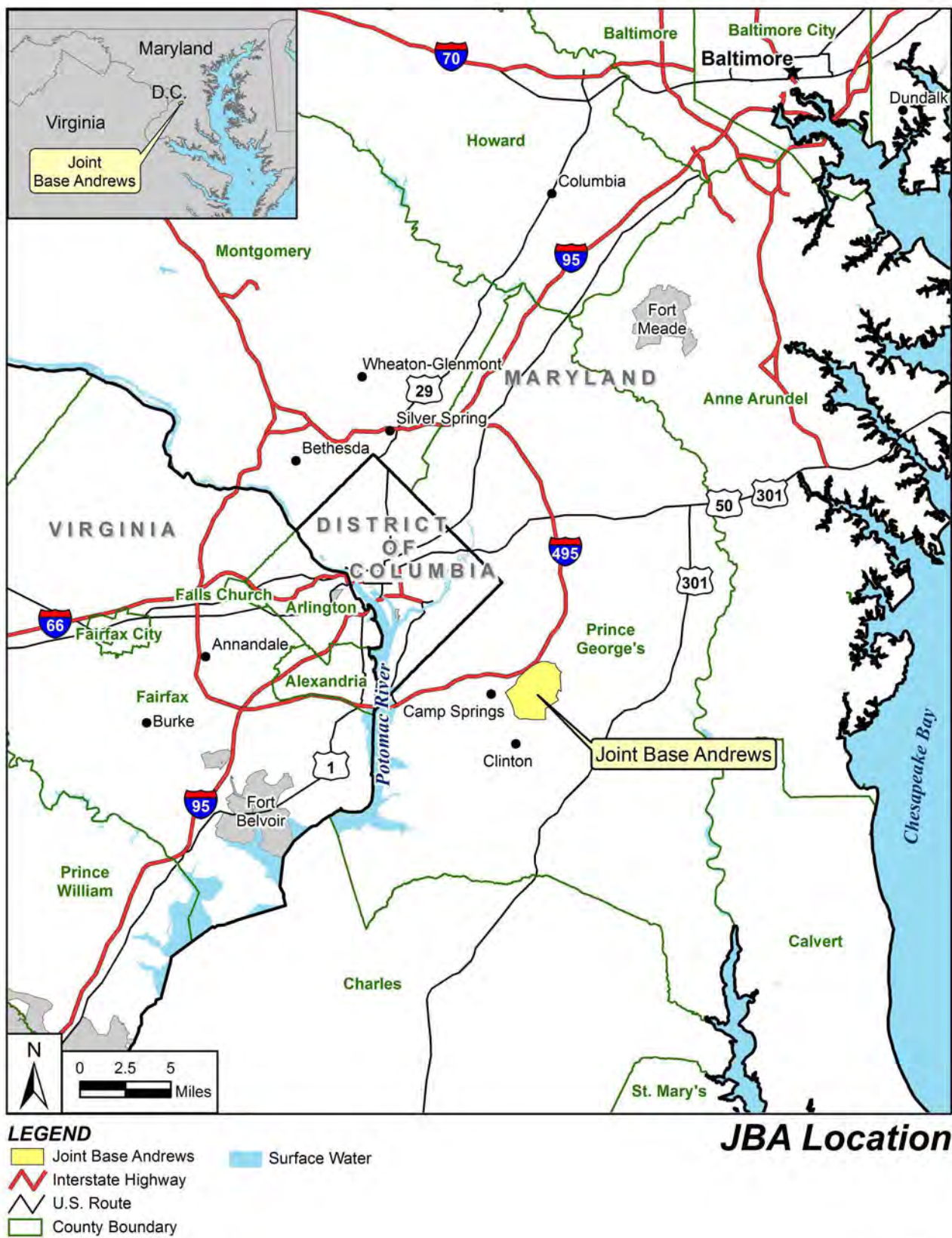
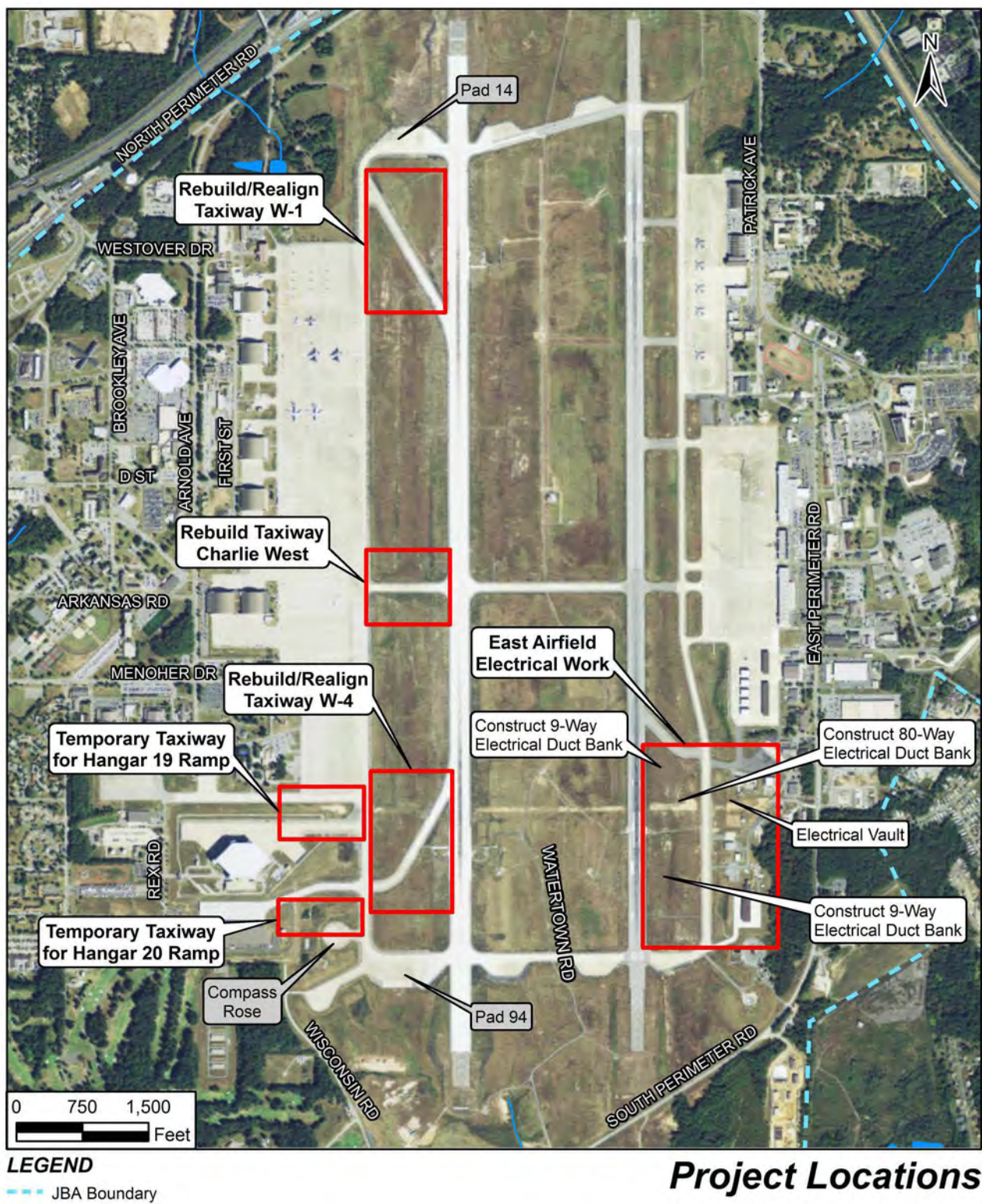
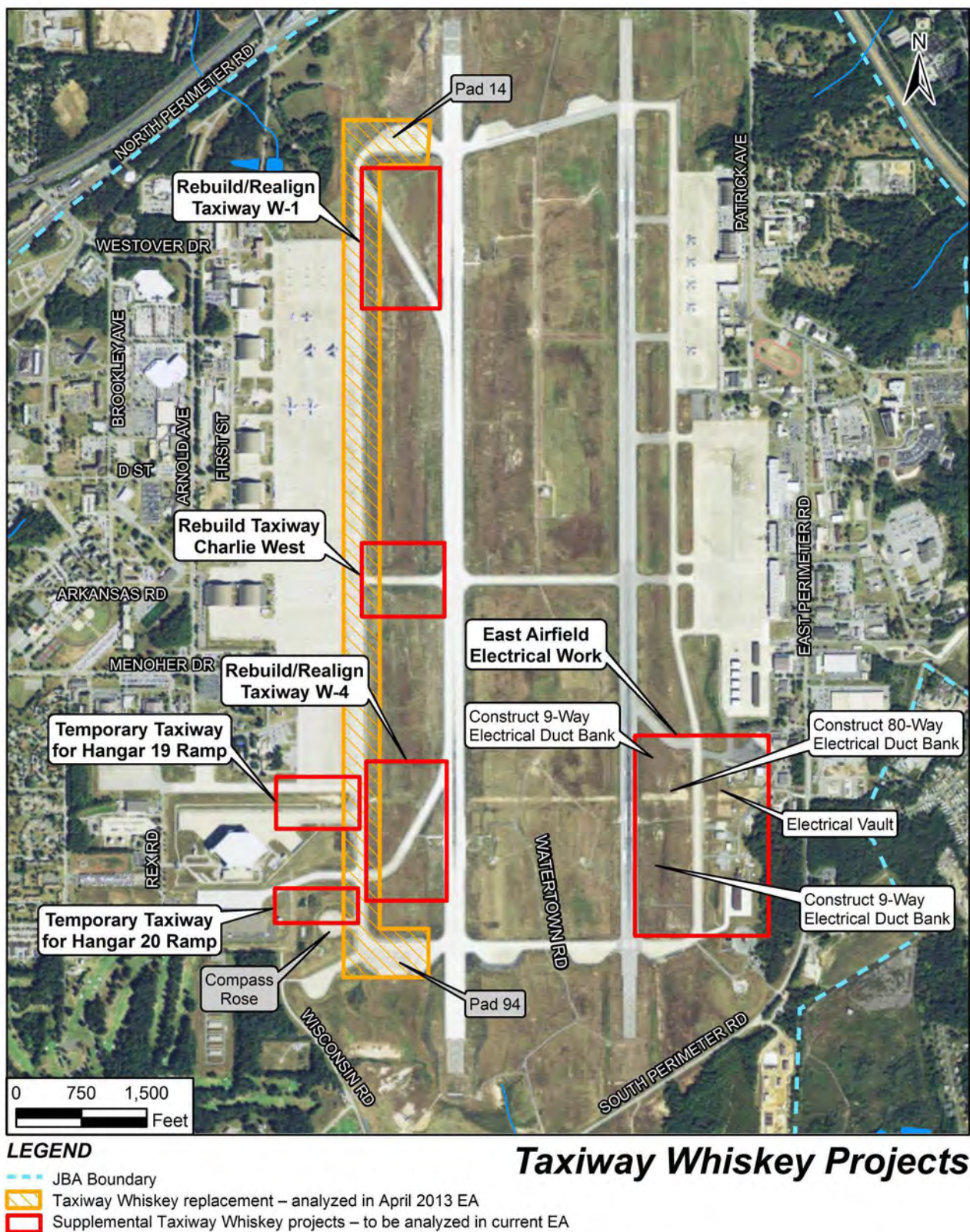


Figure 1



Source: ESRI 2013; JBA GIS 2014.

Figure 2



Source: ESRI 2013; JBA GIS 2014.

Figure 3



Maryland Department of Planning

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

David R. Craig, Secretary
Wendi W. Peters, Deputy Secretary

June 16, 2015

Ms. Anne Hodges
Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20150616-0514

Reply Due Date: 06/26/2015

Project Description: Scoping: Proposed Action and Site Map for Taxiway Whiskey Rebuild Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, Maryland

Project Address: Joint Base Andrews-Naval Air Facility Washington, MD 20762

Project Location: Prince George's County

Clearinghouse Contact: Nasrin Rahman

Dear Ms. Hodges:

Thank you for submitting your project for intergovernmental review. Your participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps to ensure that your project will be consistent with the plans, programs, and objectives of State agencies and local governments.

We have forwarded your project to the following agencies and/or jurisdictions for their review and comments: the Maryland Department(s) of Natural Resources, Environment, Transportation and the Maryland Department of Planning, including the Maryland Historical Trust; and Prince George's County. A composite review and recommendation letter will be sent to you by the reply due date. Your project has been assigned a unique State Application Identifier that you should use on all documents and correspondence.

Please be assured that we will expeditiously process your project. The issues resolved through the MIRC process enhance the opportunities for project funding and minimize delays during project implementation.

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at nasrin.rahman@maryland.gov. Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey, J.D., Assistant Secretary

LCJ:NR
15-0514_NRR.NEW.doc



Maryland Department of Planning

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

David R. Craig, Secretary
Wendi W. Peters, Deputy Secretary

July 13, 2015

Ms. Anne Hodges
Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20150616-0514

Applicant: Department of the Air Force

Project Description: Scoping: Proposed Action and Site Map for Taxiway Whiskey Rebuild Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, Maryland

Project Address: Joint Base Andrews-Naval Air Facility Washington, MD 20762

Project Location: Prince George's County

Approving Authority: U.S. Department of Defense DOD/ARMY

Recommendation: Consistent with Qualifying Comment(s)

Dear Ms. Hodges:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.01.04-.06, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter constitutes the State process review and recommendation. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Department(s) of Natural Resources, Transportation, the Environment and the Maryland Department of Planning, including the Maryland Historical Trust, and Prince George's County.

The Maryland Department(s) of Natural Resources, Transportation and the Maryland Department of Planning, including the Maryland Historical Trust; and Prince George's County found this project to be consistent with their plans, programs and objectives.

The Department of Transportation stated that "as far as can be determined at this time, the subject has no unacceptable impacts on plans or programs."

The Maryland Historical Trust has determined that the project will have "no effect" on historic properties and that the federal and/or State historic preservation requirements have been met.

The Maryland Department of Environment found this project to be generally consistent with their plans, programs and

objectives, but included certain qualifying comments summarized below.

1. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land Management Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information.
2. If the proposed project involves demolition – Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information.
3. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Waste Diversion and Utilization Program at (410) 537-3314 for additional information regarding recycling activities.
4. The Waste Diversion and Utilization Program should be contacted directly at (410) 537-3314 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.
5. Any contract specifying “lead paint abatement” must comply with Code of Maryland Regulations (COMAR) 26.16.01 - Accreditation and Training for Lead Paint Abatement Services. If a property was built before 1950 and will be used as rental housing, then compliance with COMAR 26.16.02 - Reduction of Lead Risk in Housing; and Environment Article Title 6, Subtitle 8, is required. Additional guidance regarding projects where lead paint may be encountered can be obtained by contacting the Environmental Lead Division at (410) 537-3825.
6. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs (VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437.

Any statement of consideration given to the comments(s) should be submitted to the approving authority, with a copy to the State Clearinghouse. The State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the approving authority cannot accommodate the recommendation.

Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at

Ms. Anne Hodges
July 13, 2015
Page 3
State Application Identifier: MD20150616-0514

nasrin.rahman@maryland.gov. Also please complete the attached form and return it to the State Clearinghouse as **Number**. This will ensure that our files are complete.

Thank you for your cooperation with the MIRC process.

Sincerely,

A handwritten signature in blue ink, reading "Linda C. Janey".

Linda C. Janey, J.D., Assistant Secretary

LCJ:NR

cc:

Greg Golden - DNR
Amanda Degen - MDE

Tina Quinichette - MDOT
Kathleen Herbert - PGEO

Peter Conrad - MDPL
Beth Cole - MHT

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Maryland Department of Planning

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

David R. Craig, Secretary
Wendi W. Peters, Deputy Secretary

PROJECT STATUS FORM

Please complete this form and return it to the State Clearinghouse upon receipt of notification that the project has been approved or not approved by the approving authority.

TO: Maryland State Clearinghouse
Maryland Department of Planning
301 West Preston Street
Room 1104
Baltimore, MD 21201-2305

DATE: _____
(Please fill in the date form completed)

FROM: _____
(Name of person completing this form.)

PHONE: _____
(Area Code & Phone number)

RE: State Application Identifier: MD20150616-0514
Project Description: Scoping: Proposed Action and Site Map for Taxiway Whiskey Rebuild
Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, Maryland

PROJECT APPROVAL

This project/plan was: ☐ Approved ☐ Approved with Modification ☐ Disapproved

Name of Approving Authority: _____ Date Approved: _____

FUNDING APPROVAL

The funding (if applicable) has been approved for the period of:

_____, 201__ to _____, 201__ as follows:

Federal \$:	Local \$:	State \$:	Other \$:
_____	_____	_____	_____

OTHER

☐ Further comment or explanation is attached



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 11TH WING (AFDW)
JOINT BASE ANDREWS, MARYLAND 20762**

3 August 2015

MEMORANDUM FOR SEE DISTRIBUTION

FROM: 11 CES/CEIE
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

SUBJECT: 30-Day Comment Period - Draft Environmental Assessment for Taxiway Whiskey Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, Prince George's County, Maryland

1. Joint Base Andrews-Naval Air Facility, Washington, MD (JBA) has prepared an Environmental Assessment (EA) for improving its operational efficiency and complying with current airfield standards by rebuilding/realigning existing taxiways and upgrading select airfield utility services at JBA. Pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321–4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Sections 1500–1508), and 32 CFR Part 989, et seq., JBA has prepared an EA that considers the potential consequences to human health and the natural environment. The EA examines the effects of the proposed project and includes analysis of the required no action alternative.
2. Note that the Air Force previously prepared an EA that analyzed the replacement of Taxiways Sierra and Whiskey (Environmental Assessment for Replacement of Taxiway Sierra, Taxiway Whiskey, Pad 12, and Pad 13 at Joint Base Andrews-Naval Air Facility Washington Prince George's County, Maryland, April 2013), and the supplemental projects of concern in this EA and those of the previous EA are related and interdependent. The projects will be undertaken in phases, with areas of the taxiways considered in the two EAs (e.g., Taxiway Whiskey, the subject of the previous EA, and Taxiway Whiskey 1, included in this EA) being phased together to avoid duplication of the pavement work where the projects intersect and to minimize disruptions in airfield operations. The cumulative effects of the projects are analyzed in this EA.
3. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we invite your agency to comment on the Draft EA and the draft Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) and provide comments regarding any issues under your agency's jurisdiction.

The Chief's Own!

4. Enclosed are copies of the Draft EA and Draft FONSI/FONPA. They are also available online at <http://www.andrews.afmil/library/environmental/index.asp>. Please provide written comments to Anne Hodges, 11th Civil Engineer Squadron, 3466 North Carolina Avenue, Joint Base Andrews, MD 20762 or send via email to anne.m.hodges2.civ@mail.mil. All comments must be received by 5 September 2015. If you need further information please contact Ms. Hodges at 301-981-1426.



STEVE RICHARDS
Chief of Environmental Management

Enclosure

Distribution List

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Maryland Department of Planning

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

David R. Craig, Secretary
Wendi W. Peters, Deputy Secretary

August 5, 2015

Ms. Anne Hodges
Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20150805-0742

Reply Due Date: 09/04/2015

Project Description: Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) for Taxiway Whiskey Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, MD (See MD20150616-0514)

Project Location: Prince George's County

Clearinghouse Contact: Nasrin Rahman

Dear Ms. Hodges:

Thank you for submitting your project for intergovernmental review. Your participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps to ensure that your project will be consistent with the plans, programs, and objectives of State agencies and local governments.

We have forwarded your project to the following agencies and/or jurisdictions for their review and comments: the Maryland Department(s) of Natural Resources, Environment, Transportation and the Maryland Department of Planning, including the Maryland Historical Trust; and Prince George's County. A composite review and recommendation letter will be sent to you by the reply due date. Your project has been assigned a unique State Application Identifier that you should use on all documents and correspondence.

Please be assured that we will expeditiously process your project. The issues resolved through the MIRC process enhance the opportunities for project funding and minimize delays during project implementation.

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at nasrin.rahman@maryland.gov. Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey, J.D., Assistant Secretary

LCJ:NR



Maryland Department of Planning

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

David R. Craig, Secretary
Wendi W. Peters, Deputy Secretary

September 8, 2015

Ms. Anne Hodges
Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20150605-0742

Applicant: Department of the Air Force

Project Description: Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) for Taxiway Whiskey Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, MD (See MD20150616-0514)

Project Address: Joint Base Andrews-Naval Air Facility Washington, MD 20762

Project Location: Prince George's County

Approving Authority: U.S. Department of Defense DOD/USAF

Recommendation: Consistent with Qualifying Comment(s)

Dear Ms. Hodges:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.01.04-.06, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter constitutes the State process review and recommendation based upon comments received to date. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Department(s) of Natural Resources, Transportation, the Environment and the Maryland Department of Planning, including the Maryland Historical Trust, and Prince George's County. As of this date, Prince George's County has not submitted comments.

The Maryland Department(s) of Natural Resources, Transportation and the Maryland Department of Planning, including the Maryland Historical Trust found this project to be consistent with their plans, programs and objectives.

The Department of Transportation stated that "as far as can be determined at this time, the subject has no unacceptable impacts on plans or programs."

The Maryland Department of Planning stated that the project is consistent with the requirements of State Finance and Procurement Article 5-7B-02; 03; 04 and 05 Smart Growth and Neighborhood Conservation (Priority Funding Areas).

The Maryland Historical Trust has determined that the project will have "no effect" on historic properties and that the federal and/or State historic preservation requirements have been met.

301 West Preston Street - Suite 1101 - Baltimore - Maryland - 21201

Tel: 410.767.4500 - Toll Free: 1.877.767.6272 - TTY users: Maryland Relay - Planning.Maryland.gov

Ms. Anne Hodgee
September 8, 2015
Page 2
State Application Identifier: MD20150005-0742

The Maryland Department of Environment found this project to be generally consistent with their plans, programs and objectives, but included certain qualifying comments summarized below:

1. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land Management Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information.
2. If the proposed project involves demolition – Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information.
3. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Waste Diversion and Utilization Program at (410) 537-3314 for additional information regarding recycling activities.
4. The Waste Diversion and Utilization Program should be contacted directly at (410) 537-3314 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.
5. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs (VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437.

Any statement of consideration given to the comments(s) should be submitted to the approving authority, with a copy to the State Clearinghouse. The State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the approving authority cannot accommodate the recommendation.

Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at nasrin.rahman@maryland.gov. Also please complete the attached form and return it to the State Clearinghouse as soon as the status of the project is known. *Any substitutions of this form must include the State Application Identifier*

Ms. Anne Hodges
September 8, 2015
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State Application Identifier: MD20150805-0742

Number. This will ensure that our files are complete.

Thank you for your cooperation with the MIRC process.

Sincerely,


Linda C. Janey, J.D., Assistant Secretary

LCJ:NR

cc:

Greg Golden - DNR
Amanda Degen - MDE

Tina Quinichette - MDOT
Kathleen Herbert - PGEO

Peter Conrad - MDPL
Beth Cole - MHT

15-0742 CRR.CLS.doc



Maryland Department of Planning

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

David R. Craig, Secretary
Wendy W. Peters, Deputy Secretary

PROJECT STATUS FORM

Please complete this form and return it to the State Clearinghouse upon receipt of notification that the project has been approved or not approved by the approving authority.

TO: Maryland State Clearinghouse
Maryland Department of Planning
301 West Preston Street
Room 1104
Baltimore, MD 21201-2305

DATE: _____
(Please fill in the date form completed)

FROM: _____
(Name of person completing this form.)

PHONE: _____
(Area Code & Phone number)

RE: State Application Identifier: MD20150805-0742
Project Description: Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) for Taxiway Whiskey Supplemental Projects at Joint Base Andrews-Naval Air Facility Washington, MD (See MD20150616-0514)

PROJECT APPROVAL

This project/plan was: ☐ Approved ☐ Approved with Modification ☐ Disapproved

Name of Approving Authority: _____

Date Approved: _____

FUNDING APPROVAL

The funding (if applicable) has been approved for the period of:

_____, 201__ to _____, 201__ as follows:

Federal \$: _____

Local \$: _____

State \$: _____

Other \$: _____

OTHER

☐ Further comment or explanation is attached

301 West Preston Street - Suite 1101 - Baltimore - Maryland - 21201

MDPCM-1F

Tel: 410.767.4500 - Toll Free: 1.877.767.6272 - TTY users: Maryland Relay - Planning.Maryland.gov

IN REPLY REFER TO:
NCPC File No. 7711

September 5, 2015

Ms. Anne Hodges
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

Re: Taxiway Whiskey Supplemental Projects Draft Environmental Assessment

Dear Ms. Hodges:

Thank you for the opportunity to comment on the Taxiway Whiskey Supplemental Projects Draft Environmental Assessment (DEA) on behalf of the National Capital Planning Commission (NCPC). As the central planning agency for the federal government in the National Capital Region, NCPC has review authority related to the project under the National Capital Planning Act (40 USC § 8722 (b) (1)).¹ We understand that the Proposed Action will improve Taxiways W-1, W-4, Charlie West, and reconstruct intersections on Taxiway Whiskey, as well as erect temporary infrastructure necessary to maintain continued operability of the Joint Base Andrews air mission throughout the project. The following sections provide NCPC staff comments that should be acknowledged in the Final Environmental Assessment (FEA) and addressed in future anticipated taxiway project submissions.

Surface Water

The DEA notes that the project will comply with all applicable State and federal stormwater management regulations under Section 438 of the Energy Independence and Security Act (EISA). As part of the project's future NCPC submission, please submit a brief stormwater management performance report that demonstrates compliance with State and Section 438 standards. Ideally, the report would include a summary table with the State/EISA rate and volume standards, as well as performance rate/flow values for each of the project site's drainage areas.

Floodplains

The draft EA references current federal regulations regarding floodplain development under Executive Order (EO) 11988, entitled *Floodplain Management*. However, please note that there is a new Executive Order - 13690 (*Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*) – that is currently under development by the Administration, which could take effect this fall. Should the new EO

¹ The Planning Act requires federal and District of Columbia agencies to advise and consult with NCPC in the preparation of agency plans prior to preparation of construction plans.

enactment date precede the date of the Commission's final action, the Commission will expect project compliance with the new Executive Order.

Executive Order 13690 encourages federal agencies to design for flood events that are greater than the 100-year flood standard, even offering the 500-year flood as a one potential design option for federal projects. While the 500-year floodplain is not a mandatory regulatory benchmark, this standard is used to address increased flood risk that results from many factors, including climate change. Multiple studies have documented climate change effect such as regional sea level rise, land subsidence, and more extreme and frequent rainfall events. As such, it is important for the Air Force to consider potential vulnerabilities associated with this project's partial location within Piscataway Creek's 500-year flood zone. In addition, as Joint Base Andrews undertakes update of a new Master Plan, the Air Force should assess the impact of the new Executive Order 13690 upon the installation in its entirety, and design all future projects according to the new standards as necessary.

These comments have been prepared in accordance with NCPC's Environmental and Historic Preservation Policies and Procedures, and reflect the information that NCPC will need to adequately review this project relative to the policies contained in the Federal Elements of the Comprehensive Plan. If you have any questions about these comments, please contact Michael W. Weil at (202) 482-7253 or michael.weil@ncpc.gov.

Sincerely,

A handwritten signature in blue ink that reads "Lucy Kempf". The signature is fluid and cursive, with the first name "Lucy" and last name "Kempf" clearly distinguishable.

Lucy Kempf

Director, Urban Design and Plan Review

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Appendix B
Air Quality: Supporting Documentation

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Methodology

Construction emissions would result from demolition of the taxiways and pads, hauling the demolished debris to a batch plant within approximately three miles from project site, operating the batch plant, storage piles, preparing the project sites for construction, transporting construction material from the batch plant to where the taxiways and haul would be constructed, and construction of the Proposed Action.

Most emissions would result from hauling material to and from the batch plant and operation of the batch plant. The footprint of the demolished area was estimated to be 23.3 acres (1,013,604 square feet) and the construction area was estimated to be 22.6 acres (984,781 square feet). The amount of material requiring hauling was estimated by multiplying the demolished and construction areas, respectively, by an estimated pavement thickness of 2.5 feet. To estimate the number of trips for transporting material to and from the batch plant, the volume of material demolished and used for constructing the taxiways was divided by 16 tons, the estimated amount of material a truck can carry each trip.

Construction emissions were calculated using California Emissions Estimator Model (CalEEMod), which provides a platform for calculating emissions from a land use project. CalEEMod is designed to calculate both daily and annual emissions of criteria pollutants and GHGs resulting from construction equipment based on equipment type, operating hours per day, and number of days per year. The Proposed Action is estimated to begin starting in 2016 and would be concluded in late 2019. For purposes of determining the maximum amount of emissions that can be emitted during a given year, it was estimated that most emissions would occur in 2016 and would be a result of conducting all required demolition, hauling all the demolished material, and preparing the site for construction. CalEEMod results for the Proposed Action are included in this Appendix.

Emissions resulting from operation of the batch plant and storage piles would depend on the amount of material processed, which is the amount of material demolished. This amount is estimated at 93,852 cubic yards, which is expected to be processed at the same annual rates and, therefore, generate the same emission rates as that estimated in the *Environmental Assessment for Replacing of Taxiway Sierra, Taxiway Whiskey, Pad 12, and Pad 13 at Joint Base Andrews-Naval Air Facility Washington Prince George's County, Maryland* (Department of the Air Force 2013). Emission rates are summarized in the table below.

Table B-1
Annual Particulates Emissions from Storage Piles and Batch Plant

Source	PM ₁₀ (tpy)	PM _{2.5} (tpy)
Storage Piles	1.7	0.1
Batch Plant	6.8	
Source Department of the Air Force 2013		
Notes:		
PM _{2.5}	particulate matter less than 2.5 microns in diameter	
PM ₁₀	particulate matter less than 10 microns in diameter	
tpy	tons per year	

Andrews JBA

1.0 Emissions Summary

1.1 Overall Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.704	6.8610	6.4007	7.34E-03	1.2259	0.3426	1.5685	0.2618	0.3173	0.579	0.0000	670.4348	670.4348	0.1463	0.0000	673.5079
2017	0.0698	0.4719	0.7250	1.3600e-003	0.0795	0.0259	0.1054	0.0209	0.0246	0.0455	0.0000	110.3962	110.3962	9.6400e-003	0.0000	110.5986
2018	0.3394	2.3977	3.8337	7.7100e-003	0.3486	0.1246	0.4732	0.0934	0.1186	0.2120	0.0000	612.0441	612.0441	0.0525	0.0000	613.1459
2019	0.1711	0.6945	1.0536	2.1300e-003	0.1023	0.0353	0.1375	0.0270	0.0334	0.0604	0.0000	168.1125	168.1125	0.0188	0.0000	168.5070
Total	1.2842	10.4251	12.0130	0.0185	1.7563	0.5283	2.2846	0.4031	0.4938	0.8969	0.0000	1,560.9876	1,560.9876	0.2272	0.0000	1,565.7594

2.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	7/28/2016	5	150	
2	Site Preparation	Site Preparation	7/29/2016	9/8/2016	5	30	
3	Grading	Grading	9/9/2016	10/27/2016	5	35	
4	Building Construction	Building Construction	10/27/2017	3/28/2019	5	370	
5	Paving	Paving	3/29/2019	4/25/2019	5	20	
6	Architectural Coating	Architectural Coating	4/26/2019	5/23/2019	5	20	

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 14,775 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	9	23.00	0.00	11,878.00	30.00	6.50	6.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	30.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	30.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	100.00	10.00	11,540.00	30.00	30.00	6.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coating	1	5.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HDT
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2.1 Construction Measures

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

2.2 Demolition - 2016

Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9540	0.0000	0.9540	0.1445	0.0000	0.1445	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3982	4.1566	3.1701	3.6900e-003		0.2283	0.2283		0.2121	0.2121	0.0000	344.2977	344.2977	0.0956	0.0000	346.3051
Total	0.3982	4.1566	3.1701	3.6900e-003	0.9540	0.2283	1.1823	0.1445	0.2121	0.3566	0.0000	344.2977	344.2977	0.0956	0.0000	346.3051

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1044	0.5502	1.4976	1.3700e-003	0.0300	7.1400e-003	0.0372	8.2500e-003	6.5500e-003	0.0148	0.0000	123.8314	123.8314	1.0300e-003	0.0000	123.8531
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-003	0.0188	0.1887	4.4000e-004	0.0380	2.6000e-004	0.0382	0.0101	2.4000e-004	0.0103	0.0000	33.2110	33.2110	1.7000e-003	0.0000	33.2467
Total	0.1131	0.5689	1.6863	1.8100e-003	0.0680	7.4000e-003	0.0754	0.0184	6.7900e-003	0.0251	0.0000	157.0424	157.0424	2.7300e-003	0.0000	157.0997

2.3 Site Preparation - 2016

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3600e-003	2.9400e-003	0.0295	7.0000e-005	5.9400e-003	4.0000e-005	5.9800e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.1983	5.1983	2.7000e-004	0.0000	5.2038
Total	1.3600e-003	2.9400e-003	0.0295	7.0000e-005	5.9400e-003	4.0000e-005	5.9800e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.1983	5.1983	2.7000e-004	0.0000	5.2038

2.4 Grading - 2016

Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0683	0.0000	0.0683	0.0283	0.0000	0.0283	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1134	1.3092	0.8599	1.0800e-003		0.0627	0.0627		0.0577	0.0577	0.0000	101.8424	101.8424	0.0307	0.0000	102.4875
Total	0.1134	1.3092	0.8599	1.0800e-003	0.0683	0.0627	0.1310	0.0283	0.0577	0.0860	0.0000	101.8424	101.8424	0.0307	0.0000	102.4875

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7700e-003	3.8100e-003	0.0383	9.0000e-005	7.7000e-003	5.0000e-005	7.7600e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.7385	6.7385	3.4000e-004	0.0000	6.7457
Total	1.7700e-003	3.8100e-003	0.0383	9.0000e-005	7.7000e-003	5.0000e-005	7.7600e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.7385	6.7385	3.4000e-004	0.0000	6.7457

2.5 Building Construction - 2017

Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0438	0.3265	0.2753	4.0000e-004		0.0237	0.0237		0.0226	0.0226	0.0000	34.7606	34.7606	7.3300e-003	0.0000	34.9145
Total	0.0438	0.3265	0.2753	4.0000e-004		0.0237	0.0237		0.0226	0.0226	0.0000	34.7606	34.7606	7.3300e-003	0.0000	34.9145

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0108	0.0589	0.1666	1.7000e-004	0.0229	7.4000e-004	0.0236	5.7200e-003	6.7000e-004	6.3900e-003	0.0000	14.6967	14.6967	1.2000e-004	0.0000	14.6992
Vendor	5.1900e-003	0.0642	0.0589	2.1000e-004	6.0400e-003	1.1300e-003	7.1600e-003	1.7200e-003	1.0300e-003	2.7600e-003	0.0000	18.4104	18.4104	1.2000e-004	0.0000	18.4129
Worker	0.0100	0.0223	0.2243	5.9000e-004	0.0506	3.3000e-004	0.0510	0.0135	3.1000e-004	0.0138	0.0000	42.5285	42.5285	2.0700e-003	0.0000	42.5720
Total	0.0260	0.1454	0.4497	9.7000e-004	0.0795	2.2000e-003	0.0817	0.0209	2.0100e-003	0.0229	0.0000	75.6356	75.6356	2.3100e-003	0.0000	75.6841

2.6 Building Construction - 2018

Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2148	1.6571	1.5321	2.2600e-003		0.1128	0.1128		0.1077	0.1077	0.0000	195.5227	195.5227	0.0403	0.0000	196.3689
Total	0.2148	1.6571	1.5321	2.2600e-003		0.1128	0.1128		0.1077	0.1077	0.0000	195.5227	195.5227	0.0403	0.0000	196.3689

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0494	0.3025	0.8538	9.3000e-004	0.0271	4.0500e-003	0.0311	7.2400e-003	3.7200e-003	0.0110	0.0000	81.7803	81.7803	6.7000e-004	0.0000	81.7945
Vendor	0.0260	0.3239	0.3048	1.1600e-003	0.0342	5.8800e-003	0.0401	9.7800e-003	5.4100e-003	0.0152	0.0000	102.5612	102.5612	6.6000e-004	0.0000	102.5751
Worker	0.0493	0.1142	1.1431	3.3600e-003	0.2873	1.8600e-003	0.2891	0.0764	1.7200e-003	0.0781	0.0000	232.1798	232.1798	0.0108	0.0000	232.4074
Total	0.1246	0.7406	2.3017	5.4500e-003	0.3486	0.0118	0.3604	0.0934	0.0109	0.1042	0.0000	416.5214	416.5214	0.0122	0.0000	416.7770

2.7 Building Construction - 2019

Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0454	0.3634	0.3646	5.4000e-004		0.0232	0.0232		0.0221	0.0221	0.0000	46.8025	46.8025	9.4200e-003	0.0000	47.0003
Total	0.0454	0.3634	0.3646	5.4000e-004		0.0232	0.0232		0.0221	0.0221	0.0000	46.8025	46.8025	9.4200e-003	0.0000	47.0003

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0108	0.0673	0.1967	2.3000e-004	0.0232	9.6000e-004	0.0242	5.8400e-003	8.8000e-004	6.7200e-003	0.0000	19.4269	19.4269	1.6000e-004	0.0000	19.4303
Vendor	5.8100e-003	0.0703	0.0694	2.8000e-004	8.2700e-003	1.3200e-003	9.5800e-003	2.3600e-003	1.2100e-003	3.5700e-003	0.0000	24.3586	24.3586	1.5000e-004	0.0000	24.3618
Worker	0.0107	0.0253	0.2545	8.1000e-004	0.0693	4.4000e-004	0.0698	0.0184	4.1000e-004	0.0188	0.0000	53.7695	53.7695	2.4400e-003	0.0000	53.8207
Total	0.0273	0.1628	0.5207	1.3200e-003	0.1008	2.7200e-003	0.1035	0.0266	2.5000e-003	0.0291	0.0000	97.5549	97.5549	2.7500e-003	0.0000	97.6128

2.8 Paving - 2019

Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0143	0.1494	0.1437	2.2000e-004		8.0900e-003	8.0900e-003		7.4500e-003	7.4500e-003	0.0000	20.0394	20.0394	6.3400e-003	0.0000	20.1726
Paving	0.0296					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0439	0.1494	0.1437	2.2000e-004		8.0900e-003	8.0900e-003		7.4500e-003	7.4500e-003	0.0000	20.0394	20.0394	6.3400e-003	0.0000	20.1726

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	4.4000e-004	4.6400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8718	0.8718	4.0000e-005	0.0000	0.8727
Total	3.7000e-004	4.4000e-004	4.6400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8718	0.8718	4.0000e-005	0.0000	0.8727

2.9 Architectural Coating - 2019

Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0514					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5578
Total	0.0540	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5578

Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.5000e-004	1.5500e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2906	0.2906	1.0000e-005	0.0000	0.2909
Total	1.2000e-004	1.5000e-004	1.5500e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2906	0.2906	1.0000e-005	0.0000	0.2909

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Appendix C
Economic Impact Forecast System (EIFS) Model

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ECONOMIC IMPACT FORECAST SYSTEM (EIFS) MODEL

SOCIOECONOMIC IMPACT ASSESSMENT

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base of a region. In this regard, the proposed JBA airfield taxiway supplementary actions (including rebuild/realign Taxiways W-1, Charlie West, and W-4; reconstruct the intersections of Taxiways W-3 and W-5 with Taxiway Whiskey and construct temporary taxiways for W-3 and W-5; and construct east airfield electrical vault) would have a multiplier effect on the regional economy. With the proposed action, direct jobs would be created (e.g., construction jobs), generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services.

THE ECONOMIC IMPACT FORECAST SYSTEM

The U.S. Army, with the assistance of many academic and professional economists and scientists, developed EIFS to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS should be used in NEPA assessments. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS was developed under a joint project of the U.S. Army Corps of Engineers, the U.S. Army Environmental Policy Institute, and the Computer and Information Science Department of Clark Atlanta University. EIFS is implemented as an on-line system supported by the U.S. Army Corps of Engineers, Mobile District. The system is available to anyone with an approved user-id and password. U.S. Army Corps of Engineers staff is available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to define an economic region by identifying the counties, parishes, or cities to be analyzed. Once the region is defined, the system aggregates the data, calculates multipliers and other variables used in the EIFS model, and prompts the user for forecast input data.

THE EIFS MODEL

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from federal-related changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the region or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the NEPA EA and EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for example, a dollar increase in local expenditures because of an expansion of a military installation in the region. EIFS estimates its multipliers using a location quotient approach based on the concentration of industries within the region relative to the industrial concentrations for the nation.

The user inputs into the model the data elements which describe the action: the change in expenditures, or dollar volume of the construction project(s); change in civilian or military employment; average annual income of affected civilian or military employees; the percent of civilians expected to relocate because of the proposed action; and the percent of military living on-post. Once these are entered into the EIFS model, a projection of changes in the local economy is provided. These are projected changes in sales volume, income, employment, and population. These four indicator variables are used to measure and evaluate socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing). Employment is the total change in local employment because of the proposed action, including those personnel who are initially affected by an action, as well as the direct and secondary changes in local employment. Income is the total change in local wages and salaries because of the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action.

The proposed JBA action evaluated in this EA includes projects for demolition, removal, relocation, construction, realignment, rebuilding, and repaving of JBA airfield taxiways and pads, and upgrading select airfield utility services. The current working estimate for the total cost of these proposed projects (about \$119,984,200) was divided over the estimated construction period (about 4 years) and input in to the EIFS model as the change in expenditures (about \$29,996,050 per year).

THE SIGNIFICANCE OF SOCIOECONOMIC IMPACTS

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the significance of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, income, employment, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries (the RTVs) that provide a basis for comparing an action's impact on the historical fluctuation in a particular area. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

		Increase	Decrease
Sales Volume	X	100%	75%
Income	X	100%	67%
Employment	X	100%	67%
Population	X	100%	50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary, but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansion.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

The following are the EIFS input and output data for the proposed action and the RTV values for the study area.

EIFS REPORT

PROJECT NAME

JBA Whiskey Taxiway Rebuild Supplemental Projects EA

STUDY AREA

Prince George's County, MD

FORECAST INPUT

Change In Local Expenditures	\$29,996,050
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	\$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2.83	
Income Multiplier	2.83	
Sales Volume – Direct	\$19,396,740	
Sales Volume – Induced	\$35,496,030	
Sales Volume – Total	\$54,892,770	0.18%
Income – Direct	\$3,546,570	
Income - Induced	\$6,490,222	
Income – Total (place of work)	\$10,036,790	0.05%
Employment – Direct	81	
Employment – Induced	149	
Employment – Total	231	0.06%
Local Population	0	
Local Off-base Population	0	0.00%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	13.74%	11.72%	4.59%	3.30%
Negative RTV	-5.32%	-4.48%	-4.17%	-0.85%

RTV DETAILED**SALES VOLUME**

Year	Value	Adj Value	Change	Deviation	%Deviation
1969	1311821	5732658	0	0	0
1970	1486616	6139724	407067	153154	2.49
1971	1666838	6600679	460954	207041	3.14
1972	1883086	7212219	611541	357628	4.96
1973	2110529	7619009	406790	152877	2.01
1974	2307655	7499879	-119131	-373044	-4.97
1975	2453531	7311522	-188356	-442269	-6.05
1976	2699624	7612939	301417	47504	0.62
1977	2935901	7750779	137839	-116074	-1.5
1978	3254441	8005925	255146	1233	0.02
1979	3631494	8025602	19677	-234236	-2.92
1980	4028557	7815401	-210201	-464114	-5.94
1981	4430916	7798412	-16989	-270902	-3.47
1982	4577146	7598062	-200350	-454263	-5.98
1983	4970975	8003270	405208	151295	1.89
1984	5600643	8624990	621720	367807	4.26
1985	6376749	9501356	876366	622453	6.55
1986	7047456	10289286	787930	534017	5.19
1987	7885395	12222362	1933076	1679163	13.74
1988	8587537	11679050	-543311	-797224	-6.83
1989	9197479	11864748	185697	-68216	-0.57
1990	10021287	12326183	461436	207523	1.68
1991	9955098	11747015	-579168	-833081	-7.09
1992	10238359	11671729	-75286	-329199	-2.82
1993	10633391	11803064	131335	-122578	-1.04
1994	11010346	11891174	88110	-165803	-1.39
1995	11317030	11882881	-8293	-262206	-2.21
1996	11880862	12118479	235598	-18315	-0.15
1997	12781994	12781994	663515	409602	3.2
1998	13284829	13019133	237139	-16774	-0.13
1999	13818444	13265706	246573	-7340	-0.06
2000	14900935	13857870	592164	338251	2.44

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	2711417	11848892	0	0	0
1970	3132753	12938270	1089378	755077	5.84
1971	3439625	13620915	682645	348344	2.56
1972	3741997	14331848	710933	376632	2.63
1973	4069014	14689140	357292	22991	0.16
1974	4399110	14297108	-392033	-726334	-5.08
1975	4719196	14063204	-233903	-568204	-4.04
1976	5083661	14335924	272720	-61581	-0.43
1977	5448505	14384054	48130	-286171	-1.99
1978	5881297	14467991	83937	-250364	-1.73
1979	6417356	14182357	-285634	-619935	-4.37
1980	7049501	13676032	-506325	-840626	-6.15
1981	7818331	13760262	84230	-250071	-1.82
1982	8432835	13998506	238243	-96058	-0.69
1983	9096525	14645405	646900	312599	2.13
1984	10119271	15583677	938272	603971	3.88
1985	11083235	16514020	930343	596042	3.61
1986	11916961	17398764	884743	550442	3.16
1987	12959671	20087489	2688726	2354425	11.72
1988	14076285	19143748	-943742	-1278043	-6.68
1989	15176568	19577772	434024	99723	0.51
1990	16172648	19892357	314585	-19716	-0.1
1991	16716212	19725129	-167228	-501529	-2.54
1992	17356581	19786502	61373	-272928	-1.38
1993	18039887	20024275	237773	-96528	-0.48
1994	18746733	20246472	222198	-112103	-0.55
1995	19165209	20123469	-123004	-457305	-2.27
1996	19671905	20065343	-58126	-392427	-1.96
1997	20616650	20616650	551307	217006	1.05
1998	21712782	21278527	661877	327576	1.54
1999	22554116	21651951	373424	39123	0.18
2000	24243561	22546512	894561	560260	2.48

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	190249	0	0	0
1970	198932	8683	2018	1.01
1971	208284	9352	2687	1.29
1972	221176	12892	6227	2.82
1973	229967	8791	2126	0.92
1974	232606	2639	-4026	-1.73
1975	232320	-286	-6951	-2.99
1976	234526	2206	-4459	-1.9
1977	239433	4907	-1758	-0.73
1978	250626	11193	4528	1.81
1979	257679	7053	388	0.15
1980	264693	7014	349	0.13
1981	267346	2653	-4012	-1.5
1982	261973	-5373	-12038	-4.6
1983	271284	9311	2646	0.98
1984	287076	15792	9127	3.18
1985	307866	20790	14125	4.59
1986	324453	16587	9922	3.06
1987	340835	16382	9717	2.85
1988	356225	15390	8725	2.45
1989	366294	10069	3404	0.93
1990	378979	12685	6020	1.59
1991	363077	-15902	-22567	-6.22
1992	356169	-6908	-13573	-3.81
1993	359769	3600	-3065	-0.85
1994	364674	4905	-1760	-0.48
1995	369723	5049	-1616	-0.44
1996	378225	8502	1837	0.49
1997	387407	9182	2517	0.65
1998	390484	3077	-3588	-0.92
1999	395371	4887	-1778	-0.45
2000	403532	8161	1496	0.37

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	639024	0	0	0
1970	666136	27112	21969	3.3
1971	687757	21621	16478	2.4
1972	697949	10192	5049	0.72
1973	693012	-4937	-10080	-1.45
1974	689495	-3517	-8660	-1.26
1975	683044	-6451	-11594	-1.7
1976	680269	-2775	-7918	-1.16
1977	674922	-5347	-10490	-1.55
1978	671171	-3751	-8894	-1.33
1979	665610	-5561	-10704	-1.61
1980	666369	759	-4384	-0.66
1981	670209	3840	-1303	-0.19
1982	671811	1602	-3541	-0.53
1983	674430	2619	-2524	-0.37
1984	679390	4960	-183	-0.03
1985	683487	4097	-1046	-0.15
1986	688863	5376	233	0.03
1987	694845	5982	839	0.12
1988	708095	13250	8107	1.14
1989	719550	11455	6312	0.88
1990	731076	11526	6383	0.87
1991	743058	11982	6839	0.92
1992	749080	6022	879	0.12
1993	753273	4193	-950	-0.13
1994	762733	9460	4317	0.57
1995	770861	8128	2985	0.39
1996	779187	8326	3183	0.41
1997	780666	1479	-3664	-0.47
1998	789037	8371	3228	0.41
1999	795048	6011	868	0.11
2000	803612	8564	3421	0.43

***** End of Report *****

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Appendix D
Coastal Zone Consistency Determination

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Consistency with Maryland Coastal Program Enforceable Coastal Policies

Joint Base Andrews is within Maryland's designated coastal zone, and as such is regulated under the federal Coastal Zone Management Act (CZMA) and Maryland's federally-approved Coastal Zone Management Program.

The project proposed in the EA would be fully consistent with Maryland's Enforceable Coastal Policies. No effects on Maryland's coastal resources would be expected from implementing the project in the EA. All activities would be conducted in accordance with applicable laws, regulations, and policies governing erosion and sediment control and stormwater management, which would ensure that the project would occur in a manner consistent with the applicable Maryland Coastal Program enforceable policies. A synopsis of how the project would be consistent with the enforceable coastal policies is provided below.

Maryland's Enforceable Coastal Policies are divided into three general sections: General Policies, Coastal Resources, and Coastal Uses. The General Policies are further divided into Core Policies, Water Quality, and Flood Hazards. Compliance of the project proposed in the EA with each of the applicable enforceable policies is discussed below. Policies not applicable to the proposed project are noted.

GENERAL POLICIES

Core Policies

Policy: It is State policy to maintain that degree of purity of air resources which will protect the health, general welfare, and property of the people of the State. MDE (C9) Md. Code Ann., Envir. §§ 2-102 to -103.

As noted in Section 3.2.2 of the EA, the Air Force and any contractors would comply with all applicable air pollution control regulations when implementing the project proposed in the EA. Section 3.2 of the EA contains a detailed discussion of the projected air emissions associated with the proposed project. No boilers or other equipment capable of producing emissions would be expected to be installed as a result of the proposed project.

Policy: The environment shall be free from noise which may jeopardize health, general welfare, or property, or which degrades the quality of life. MDE (C9) COMAR 26.02.03.02.

Section 3.1 of the EA provides a detailed discussion of the noise environment and expected noise-related impacts associated with the project proposed in the EA. Construction noise associated with each project would cease upon completion of construction and no significant new sources of environmental noise would be introduced.

Policy: Soil erosion shall be prevented to preserve natural resources and wildlife; control floods; prevent impairment of dams and reservoirs; maintain the navigability of rivers and harbors; protect the tax base, the public lands, and the health, safety and general welfare of the people of the State, and to enhance their living environment. MDA (C4) Md. Code Ann., Agric. § 8-102(d).

JBA will control pre- and post-construction stormwater runoff, including erosion, sedimentation, and nonpoint source pollution, throughout the duration of each project. JBA will comply with the requirements described in the MDE document *Maryland Stormwater Management Guidelines for State and Federal Projects* (MDE 2010) and the *MDE Stormwater Management Act of 2007* (MDE 2007). JBA will implement environmental site design to the maximum extent practicable through the use of nonstructural BMPs and other site design techniques.

Policy: Controlled hazardous substances may not be stored, treated, dumped, discharged, abandoned, or otherwise disposed anywhere other than a permitted controlled hazardous substance facility or a facility that provides an equivalent level of environmental protection. MDE (D4) Md. Code Ann., Envir. § 7-265(a).

All contractors involved with implementing the proposed actions would be required to comply with JBA’s Environmental Protection Standards for contracts, which includes managing, storing, transporting, and disposing of hazardous materials and wastes and taking all necessary precautions to prevent spills of hazardous materials (including oils and hazardous wastes) in accordance with all applicable federal, state, and local laws and regulations.

Water Quality Policies

Policy: No one may add, introduce, leak, spill, or emit any liquid, gaseous, solid, or other substance that will pollute any waters of the State without State authorization. MDE (A5) Md. Code Ann., Envir. §§ 4-402, 9-101, 9-322.

The EA discusses compliance with laws, regulations, and policies related to the use, storage, and disposal of hazardous wastes and materials in Section 3.8. All contractors involved with implementing the proposed actions would be required to use hazardous materials; manage, store, transport, and dispose of hazardous wastes; and take all necessary precautions to prevent spills of hazardous materials (including oils and hazardous wastes) in accordance with all applicable JBA environmental standards and federal, state, and local laws and regulations. This would include any contaminated soil encountered near ERP sites.

Policy: All waters of the State shall be protected for water contact recreation, fish, and other aquatic life and wildlife. Shellfish harvesting and recreational trout waters and waters worthy of protection because of their unspoiled character shall receive additional protection. MDE (A1) COMAR 26.08.02.02.

JBA would protect the water quality of state waters by implementing erosion and sediment control measures on all construction sites and control pre- and post-construction stormwater runoff, including erosion, sedimentation, and nonpoint source pollution in accordance with Maryland *Stormwater Management Guidelines for State and Federal Projects* (MDE 2010), and the *MDE Stormwater Management Act of 2007* (MDE 2007). Additionally, all contractors would be required to manage, store, transport, and dispose of hazardous materials and wastes properly.

Policy: Any development or redevelopment of land for residential, commercial, industrial, or institutional purposes shall use small-scale non-structural stormwater management practices and site planning that mimics natural hydrologic conditions, to the maximum extent practicable. Development or redevelopment will be consistent with this policy when channel stability and 100 percent of the average annual predevelopment groundwater recharge are maintained, nonpoint source pollution is minimized, and structural stormwater management practices are used only if determined to be absolutely necessary. MDE (C9) Md. Code Ann., Envir. § 4-203; COMAR 26.17.02.01, .06.

JBA will incorporate Sustainable Design and Development and energy conservation principles into project execution, and all construction will be designed to incorporate low-impact development practices in accordance with Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade*, the Energy Policy Act of 2005, the Energy Independence and Security Act 2007, Army Sustainable Design and Development Policy, other applicable codes, laws and EOs.

Flood Hazards Policies

Policy: Proposed floodplain encroachments, except for roadways, culverts, and bridges, shall be designed to provide a minimum of 1 foot of freeboard above the elevation of the 100- year frequency flood event. In addition, the elevation of the lowest floor of all new or substantially improved residential, commercial, or industrial structures shall also be at least 1 foot above the elevation of the 100-year frequency flood event. MDE (C2) COMAR 26.17.04.01, .07, .11.

JBA would construct a temporary haul road that would partially pass through the 100-year floodplain at the southeast corner of the airfield. No other aspects of the proposed project would occur in a floodplain. The haul road would be removed upon completion of the project.

COASTAL RESOURCES POLICIES

The Chesapeake and Atlantic Coastal Bays Critical Area

None of the Chesapeake and Atlantic Coastal Bays Critical Area Policies are applicable to the proposed project in the EA. The proposed project would not occur in a Chesapeake and Atlantic Coastal Bays Critical Area.

Tidal Wetlands

None of the Tidal Wetlands Policies are applicable to the proposed project in the EA. The proposed project would not occur in a tidal wetland.

Non-Tidal Wetlands

Policy: 1. Removal, excavation, grading, dredging, dumping, or discharging of, or filling a non-tidal wetland with materials of any kind, including the driving of piles and placing of obstructions; changing existing drainage characteristics, sedimentation patterns, flow patterns, or flood retention characteristics; disturbing the water level or water table; or removing or destroying plant life that would alter the character of a non-tidal wetland is prohibited unless: The proposed project has no practicable alternative...

The proposed project would result in a permanent impact on approximately 4 acres of non-tidal wetland and 0.4 acre of non-tidal wetland buffer, and a temporarily impact on approximately 0.8 acre of non-tidal wetland and 1.7 acres of non-tidal wetland buffer. Before the start of construction, appropriate permits and approvals would be obtained. JBA would work with USACE and MDE to define the specific mitigation plan. A FONPA for the wetland impacts caused by the proposed project has been prepared and is attached to this EA. JBA or its contractor would obtain and comply with the mitigation requirements of a CWA section 404 permit for the wetland impacts associated with the proposed project.

Forests

Policy: The Forest Conservation Act and its implementing regulations, as approved by NOAA, are enforceable policies. Generally, before developing an area greater than 40,000 square feet, forested and environmentally sensitive areas must be identified and preserved whenever possible. If these areas cannot be preserved, reforestation or other mitigation is required to replace the values associated with them. This policy does not apply in the Critical Area. DNR (C5) Md. Code Ann., Nat. Res. §§ 5-1601 to -1613; COMAR 08.19.01-.06.

Policy: Forestry activities shall provide for adequate restocking, after cutting, of trees of desirable species and condition; provide for reserving, for growth and subsequent cutting, a sufficient growing stock of thrifty trees of desirable species to keep the land reasonably productive; and prevent clear-cutting, or limit the size of a tract to be clear-cut in areas where clear-cutting will seriously interfere with protection of a watershed. DNR (C5) Md. Code Ann., Nat. Res. § 5-606.

The Forests Policies are not applicable to the proposed project in the EA. The proposed project would not affect forests of Maryland.

Historical and Archaeological Sites

The Historical and Archaeological Sites Policy is not applicable to the proposed project. The proposed project would not involve a submerged archaeological historic property, a cave feature or archeological site under state control, or a burial site or cemetery.

The Living Aquatic Resources Policies are not applicable to the proposed project in the EA. The proposed project would not affect aquatic resources.

COASTAL USES

The Coastal Uses Policies listed below are not applicable to the proposed project.

Mineral Extraction: The proposed project does not involve mineral extraction.

Electrical Generation and Transmission: The proposed project does not involve power plant construction, electrical transmission lines, or cooling water intake structures.

Tidal Shore Erosion Control: No tidal shores occur within the proposed project footprint.

Oil and Natural Gas Facilities: The proposed project would not involve vessels transporting oil or above-ground oil storage sites.

Dredging and Disposal of Dredged Material: The proposed project would not involve dredging or the disposal of dredged material.

Navigation: The proposed project would not involve navigation or navigation-related facilities.

Transportation: The proposed project is not a transportation development or improvement project.

Agriculture: The proposed project is not agriculture related.

Sewage Treatment: The proposed project would not involve the discharge of sewage effluent, a sewage treatment facility, or an on-site sewage disposal system.

Development

Some development policies are applicable to the proposed project:

Policy: Any development shall be designed to minimize erosion and keep sediment onsite. MDE (C4) COMAR 26.17.01.08.

Policy: Development must avoid and then minimize the alteration or impairment of tidal and non-tidal wetlands; minimize damage to water quality and natural habitats; minimize the cutting or clearing of trees and other woody plants; and preserve sites and structures of historical, archeological, and architectural significance and their appurtenances and environmental settings. MDE/DNR/CAC (D6) Md. Code Ann., Envir. §§ 4-402, 5-907(a), 16-102(b); Md. Code Ann., Nat. Res. §§ 5-1606(c), 8-1801(a); Md. Code Ann., Art. 66B § 8.01(b); COMAR 26.24.01.01(A).

JBA would protect the water quality of state waters by implementing erosion and sediment control measures on all construction sites and control pre- and post-construction stormwater runoff, including erosion, sedimentation, and nonpoint source pollution in accordance with Maryland *Stormwater Management Guidelines for State and Federal Projects* (MDE 2010) and the *MDE Stormwater Management Act of 2007* (MDE 2007). JBA will also incorporate Sustainable Design and Development and energy conservation principles into project execution.

Policy: Any proposed development may only be located where the water supply system, sewerage system, or solid waste acceptance facility is adequate to serve the proposed construction, taking into account all existing and approved developments in the service area and any water supply system, sewerage system, or solid waste acceptance facility described in the application and will not overload any present facility

for conveying, pumping, storing, or treating water, sewage, or solid waste. MDE (C9) Md. Code Ann., Envir. § 9-512.

Policy: A proposed construction project must have an allocation of water and wastewater from the county whose facilities would be affected or, in the alternative, prove access to an acceptable well and on-site sewage disposal system. The water supply system, sewerage system, and solid waste acceptance facility on which the building or development would rely must be capable of handling the needs of the proposed project in addition to those of existing and approved developments. MDE (D6) Md. Code Ann., Envir. § 9-512.

Policy: To meet the needs of existing and future development, communities must identify adequate drinking water and water resources and suitable receiving waters and land areas for stormwater management and wastewater treatment and disposal. MDE (D6) Md. Code Ann., Art. 66B § 3.05.

All areas of JBA are served by adequate utility systems.

Other development policies are not applicable to the proposed project: The project does not involve:

- A residence or commercial establishment that is served or will be served by an on-site sewage disposal system or private water system.
- Grading or building in the Severn River Watershed.
- Establishment of an industrial facility.
- Because the development is on JBA the following development policies do not apply to the proposed projects:
- Local citizens shall be active partners in planning and implementation of development. MDP (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.
- Development shall protect existing community character and be concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers. MDP (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.
- Development shall be located near available or planned transit options. MDP (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.
- Whenever possible, communities shall be designed to be compact, contain a mixture of land uses, and be walkable. MDP (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.

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